GALLIPOLIS LOCKS AND DAM

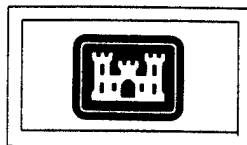## OHIO RIVER BASIN

MASON COUNTY, WV

FOUNDATION REPORT

VOLUME 3 CORE LOGS

CONSTRUCTION OF TWO PARALLEL LOCKS AND CANAL

CONTRACT DACW-69-88-C-0001

23 JANUARY 1993

19970408 032

DTIC QUALITY INSPECTED 3

U.S. ARMY CORPS OF ENGINEERS

HUNTINGTON DISTRICT

DISCLAIMER NOTICE

Gallipolis Locks

Replacement

Ohio River Basin

Mason County West Virginia

Foundation Report

Volume III

Core Logs

Construction of Two Parallel Locks and Canal

Contract No. DACW69-88-C-0001

Gallipolis Lock
Replacement

Ohio River Basin

Mason County W.V.

Foundation Report
Volume 3 Core Logs

Abbreviations

Ang.	Angular	H.	Hardness	Rot.	Rotten (ed)
Appro.	Approximate(ly)	Hi.	High(iy)(er)	Rou.	Round(ed)
Bd.	Bed(ded)(ing)	Hor.	Horizontal(iy)	Rt.	Root(s)(let)
Bk.	Black	Inc.	Inclusions	S.	Soft
Bkn.	Broken	Intbd.	Interbedded	Sa.	Sandy
Bou.	Boulder(s)	Irr.	Irregular	Scat.	Scattered
Bre.	Breccia(ted)			Se.	Seams
Br.	Brown	Jt.	Joint(ed)	Sev.	Severely
				Sevr.	Several
C.	Coarse	L.	Little	Sh.	Shaly
Cal.	Calcareous	Las.	Laminat(ions)(ed)	Sil.	Siliceous
Carb.	Carbonaceous	Lay.	Layer(s)	Sl.	Silty
Cbl.	Cobble(y)	Len.	Lens(es)	Sli.	Slight(ly)
Cl.	Clayey	Lg.	Large	Slk.	Slickensided
Comp.	Compaction	Lt.	Light	Sm.	Small
Conc.	Concretion			So.	Some
Cong	Conglomeratic	M.	Moderately	Sol.	Solution
Cem.	Cement(ed)	Ma.	Many	Sta.	Stain(ed)
		Mas.	Massive(ly)	Stf.	Stiff
Dia.	Diameter	Mat.	Material	Stks.	Streak(s)
Disc	Discontinuous	Mic.	Micaceous	Sty.	Stylolite
Dk.	Dark	Mos.	Mostly		
Dn.	Dense	Mot.	Mottled	T.	Thin
Dmp.	Damp	Mot.	Moist	Thr.	Throughout
		Mtx.	Matrix	Tk.	Thick
F.	Fine			Tr.	Trace
Fer.	Ferruginous	Nod.	Nodule(s)		
Fis.	Fissile	Num.	Numerous	Ve.	Very
Fil.	Filled(ing)			Ver.	Vertical
Fos.	Fossil(iferous)	O.	Open	Vu.	Vuggy
Frac.	Fracture(d)	Occ.	Occasional(ly)		
Frags.	Fragment(s)(al)	Org.	Organic	W.	Water
Fri.	Friable			/W.	With
F.W.	Free Water	Part.	Particle(s)	W.C.	Water Content
		Pl.	Plastic	Wd.	Weathered
G.	Grain(ed)	Peb.	Pebble(s)		
Gn.	Green	Pkt.	Pocket(s)	Xbd.	Cross Bedded
Gr.	Gray	Pn.	Plane(s)		
Gra.	Gravelly	Pt.	Part	Y.	Yellow
G.W.	Ground Water	Pyr.	Pyrite(ic)		
				Zo.	Zone
		R.	Red		
		Ro.	Rock(s)		

Rock

Symbols

Symbol	Name	Abbreviation
	Sandstone	SS.
	Conglomerate	CONG.
	Shale	SLS.
	Claystone	CLS.
	Limestone	LS.
	Coal	C.
	Indurated Clay	ICL.
	Dolomite	DO.

Hardness

Very soft or plastic – Can be indented easily
with thumb

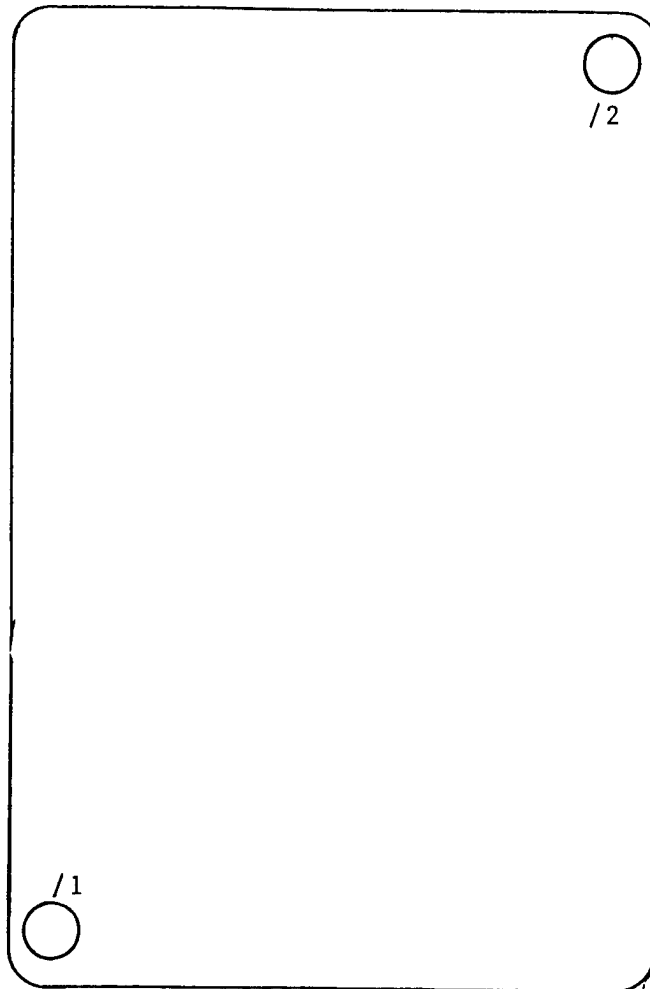**Soft** – Can be scratched with
fingernail

Moderately Hard – Can be scratched easily
with a knife; cannot be
scratched with finger
-nail

Hard – Difficult to scratch
with a knife

Very Hard – Cannot be scratched
with a knife

Example A. R-34/2 The R-34 is the Monolith
Number. The /2 shows the location of the
Core Hole in the Monolith. Refrence the
Drawing on this page for core hole locations.

DRILLING LOG	DIVISION ORD	INSTALLATION OCH-LD	SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO OS/1 STA. 16+96.5 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) OS/1

5. NAME OF DRILLER DAVID HARDER

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 495.4

8. DEPTH DRILLED INTO ROCK 45.4

9. TOTAL DEPTH OF HOLE 45.00

10. SIZE AND TYPE OF BIT 4 15½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 12

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 4/25/89 — COMPLETED 4/26/89

17. ELEVATION TOP OF HOLE 495.4

18. TOTAL CORE RECOVERY FOR BORING 45.4

19. SIGNATURE OF INSPECTOR JMW

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
495.4			SANDSTONE			PULL #1
	1		P:m.g , m.gr, m.h-h, mass		Boy 1	START 8:00 END 8:20
	2		bkn, sky 0.0-1.4; pts on			TIME 20 min DRL 20 min
	3		irr. sky lam starting		3.7	RAN 4.7 REC 4.7 LOSS 0.0
	4		@ 60; grading			UNACC 0.0 T/DEP 4.7
	5				Boy 2	DEP 5.2 PULL #2
	6					START 8:30 END 8:50 TIME 20 min
488.2	7				7.2	DRL 20 min
	8		SANDSTONE			RAN 4.4 UNACC 0 REC 4.4
	9		sky, P.g, m.h., m.gr bkn		Box 3	LOSS 0 DEP+T/DEP 9.1
	10		w/tr. cl. cor 8.2-9.1			PULL #3 START 8:20
	11		; 9.1-11.3 w/1.8 lc		10.5	END 8:45 TIME 25 min UNACC 1.8
	12		(mech): bkn mech		Boy 4	DRL 25 min RAN 3.6
	13		12.7-13.0 ; 19.1-19.5			REC 1.8 T/DEP 12.7 LOSS 1.8 DEP 13.3
	14		w/core spins; sky			PULL #4 START 9:25 RAN 2.9 END 9:37 REC 2.9
	15		19.5-19.8			TIME 12 min LOSS 0.0 DRL 12 min UNACC 0.0
479.8					15.6	DEP+T/DEP 15.6
	16		CLS			PULL #5 START 7:50
	17		sky occ sa, m.gr, s-mh. ! pts sky; V.S. 17.4-17.5		Boy 5	END 10:18 TIME 28 min
	18		! grading sa @ 18.6			DRL 28 min RAN 3.8
476.0	19				19.1	REC 3.8 LOSS 0
	20		SANDSTONE (CONT)		Boy 6 cont	UNACC 0 T/DEP 19.4 DEP 19.8

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam

HOLE NO. OS/1

| PROJECT Gallipolis Lock & Dam | INSTALLATION ORH-CD | SHEET 2 OF 3 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		Box 6	Pull #6
	21		slv, Pig, m.h, m.gr. w/occ			START 10:30
			m.gr slv lam & zones; clse			END 11:10
	22		-mspaced slv.ptvs start			Time 40min
			@ 20.3; v.bkw 22.4 - 27.0			DRL 40 min
	23		w/0.5 L.C (prob mch)		22.7	RAN 4.6
			:0.3 LC 27.0-27.3 (mech)			REC 4.1
	24		grading		Box 7	Loss 0.5
						UNACC 0.5 T/DEP 27.0
470.7						DEP 27.0
	25		SANDSTONE			Pull #7
						START 12:00
	26		P.-m.g, m.h. h. H.-m.gr			END 12:15 T/DEP 25.7
						TIME 15min
	27		mic, mihss w/occ ptg		26.8	DRL 15min
						RAN 1.7
	28		along mic lam: 0.7			REC 1.4
					Box 8	LOSS .3
	29		L.C (?) btwn 25.1 &			UNACC 0.3
			30.2 : m. spaced ptgs			DEP 29.9
	30					START 12:15 Pull #8 RAN 4.5
			on near hor, thin			END 12:30 REC 3.8
	31					TIME 5min LOSS .7
			mid lam starting @		31.0	DRL 5min UNACC .7 DEP 30.8
	32				Box 9	Pull #9
			31.0.			START 12:42
	33					END 12:55
						TIME 13min
	34					DRL 13min
						RAN 4.5
	35				34.7	REC 4.5
						LOSS 0
	36					UNACC 0 DEP + T/DEP 35.7
					Box 10	Pull #10
	37					START 1.00
						END 1:10
	38					TIME 10min
						DRL 10min
	39				38.5	RAN 5.1
						REC 4.8
	40				Box 11	LOSS 0
						UNACC 0 DEP 39.5 T/DEP 39.8
	41					Pull #11
						START 1.30
	42				41.9	END 1.45
					Box 12	TIME 15 min
	43					DRL 15 min
						RAN 4.7
	44		(CONT)		CONT	REC 5.0 LOSS 0 UNACC 0 (CONT)

PROJECT GALLIPOLIS LOCK & DAM			INSTALLATION ORH-CD		SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	44		SANDSTONE		BOX 12	DEP + T/DEP 44.5
						P-ULB42
	45					START 2:15
450.0			Bottom Hole		45.4	END 2:28
						TIME 13 min LOSS —
	46					DEL 13 min UNAC —
						RAN —
	47					REC 2.5
						DEP + T/DEP 47.0
	48					
	49					
	50					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO OS-2 STA 17+15.34 B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) OS-2

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 495.0

8. DEPTH DRILLED INTO ROCK 45.8

9. TOTAL DEPTH OF HOLE 449.2

10. SIZE AND TYPE OF BIT 4 NX 5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 13

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 4/27/89 COMPLETED 4/28/89

17. ELEVATION TOP OF HOLE 495.0

18. TOTAL CORE RECOVERY FOR BORING 45.8 %

19. SIGNATURE OF INSPECTOR √ MU

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
495.0			SANDSTONE F.g, slty, m.h, m.gr. SLS 0.6 -0.9: IPP contact			PULL #1 START 7:20
494.1	1					END 7:30
	2		SANDSTONE F:m.g, lt. m.gr. m.h -h MASS, w/chrt THIN mic LAM 'm.gr. :slty incls STARTING @ 5.7		1	TIME 10 min DEL 10 min RAN 4.8
	3					REC 4.8
	4				38	LOSS Ø UNACC Ø
	5					DEP 5.0 T/D=P4.8 PULL #2
488.8	6				2	START 7.45 END 8:00 TIME 15 min
	7		Interbdd cls & ss. :cls s.-m.h, m-dk.gr, ss.- F.g, m.h. f.-m.gr		7.5	DEL 15 min RAN 5.0
	8		0.1 LC (mech) btwn 4.8 +9.8 CLS SE @ 6.2			REC 4.9 LOSS 0.1
	9		-7.5, 12.3-13.1, 18.2- 21.5		3	UNACC 0.1
	10					DEP 10.0 T/D=7.8 PULL #3 START 9.30
	11				11.0	END 9:40 TIME 10 min
	12					DEL 10 min RAN 4.2
	13				4	REC 4.2 UNACC Ø LOSS Ø
	14				14.6	TDEP+DEP 19.0 PULL #4 START 9.50
	15					END 10:05 TIME 15 min
	16				5	DEL 15 min RAN 4.7
	17					REC 4.9 LOSS Ø
	18				18.2	UNACC Ø
	19				6 (cont)	T/DEP 18.8 DEP 19.0 PULL #5
	20		(cont)			(cont)

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 475.0					**Hole No.** OS-Z	
PROJECT Gallipolis Lock & Dam			**INSTALLATION** ORH-CD			**SHEET** 2 **OF** 3 **SHEETS**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		Interbdd cls & ss		6	PULL #5 START 10:10 END 10:20 TIME 10min
	21					DRL 10min TIDEPZI.5
473.5					21.5	
	22		SANDSTONE		7	RAN 2.7 REC 2.7
	23		f.g: sky lcky, m.ge, m.h			LOSS ∅ UNACC ∅
	24		w/occ thin sky lam			DEP 23.7 PULL #6
	25		: becoming more		25.2	PULL #7 START 10:40	START 10:30 END 10:35 TIME 5min DRL 5min RAN 3.1 REC 2.9 LOSS 0.2 UNACC 0.2
	26		sa w/depth 0.1 LC		8	END 10:58 TIME 18min DRL 18min
	27		(mech) 29.6-33.9			RAN 5.0 REC 5.0 LOSS ∅
	28					UNACC ∅
	29				28.9	
	30				9	DEPTH = 29.6 PULL #8 START 11:02
	31					END 11:15 TIME 13min
	32				32.1	DRL 13min RAN 3.8
	33					REC 3.7 T/DEP 33.4
	34				10	LOSS 0.1 UNACC 0.1
	35				35.7	DEP 39.0 PULL #9 START 11:25 END 11:35
	36					TIME 10min DRL 10min RAN 3.2 T/DEP 36.
	37					REC 3.2 LOSS ∅
	38				11	UNACC ∅ DEP 38.9
	39				39.3	PULL #10 START 7:20 END 7:35
	40					TIME 15min DRL 15min RAN 5.1
	41				12	REC 5.1 LOSS ∅ T/DEP
	42					UNACC ∅ DEP 41 PULL #11
	43				42.9	
	44		(cont)		13	START 9:45 END 9:50

| PROJECT GALLIPOLIS LOCK + DAM | | | INSTALLATION ORH-CD | | | SHEET 3 OF 3 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	44					PULLED
						TIME 5MIN
	45				13	DRL 5MIN
						RAN 4.1
4497			BOTTOM HOLE		45.8	REC 4.1 T/DEP 45.8
	46					LOSS Ø
						UNACCD DEP 46.7
	47					

DRILLING LOG		OPD		ORHeCD		

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
MoNo RI-1   STA 3+32 A

3. DRILLING AGENCY
W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number)   RI 1/1

5. NAME OF DRILLER
Dave Harper

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN   Ø 497.4

8. DEPTH DRILLED INTO ROCK   39.6

9. TOTAL DEPTH OF HOLE   462.8

10. SIZE AND TYPE OF BIT   4 15 1/2

11. DATUM FOR ELEVATION SHOWN (TBM or MSL)   M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL   B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN   DISTURBED N/A   UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES   10

15. ELEVATION GROUND WATER   N/A

16. DATE HOLE   STARTED 2/27/89   COMPLETED 2/27/89

17. ELEVATION TOP OF HOLE   497.9

18. TOTAL CORE RECOVERY FOR BORING   39.5 %

19. SIGNATURE OF INSPECTOR   JMD

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
497.9			SANDSTONE			PULL #1
496.1	1		LT gr, M, H, F.m.g. LTFL Stain FLASSY Bd			START 9:25
						END 9:37
	2		SLS		1	TIME 12 min
			gr., S-M,H, Sh, occ interbd			DRL 12 min
	3					RAN 5.0
			w/cls, cls, gr,s,sh,			REC 4.8
	4				3.8	LOSS 0.3
			1.3 - 2.3, 3.4 - 3.6 6.5 - 7.3			UNACC 0.2
	5					DCP + T/DCP 5.0
			RKN 8.7-9.2, 9.8-10.1, 12.8		2	PULL #2
	6					START 9.42
			13.0, 13.9-15.0, 29.0-29.2			END 9:56
	7				7.4	TIME 14 min
			BKN 1.3-1.5, SdSLS, 3.9-6.5			DRL 14 min
	8					RAN 3.6
			15.0-18.5, High Ang		3	REC 3.1 T/DCP 8.6
	9					LOSS 0.5
			FRAC 5.9-6.4 clsls			UNACC 0.5
	10					DCP 10.0
			below 22-23.0			PULL #3
	11					START 10:03
					11.5	END 10.17
	12					TIME 14 min
						DRL 14 min
	13				4	RAN 5.0
						REC 4.9 T/DCP 13.6
	14					LOSS 0.1
						UNACC 0.1
	15				15.1	DCP 15.0
						PULL #4
	16					START 10.22
					5	END 10.36
	17					TIME 14 min LOSS 0
						DRL 14 min UNACC 0
	18					RAN 4.7
						REC 4.7 T/DCP 18.3
					18.7	DCP 18.6
	19				6 (conT)	PULL #5
						START 10.44
	20			(cont)		END 10.56

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	20		SLS			PULL #5
	21				6	TIME 12min
						DRL 12min
	22					RAN 5.0
						REC 4.3
	23				22.5	LOSS 0.2 / TIDEP 22.8
						UNACC 0.2 DEP 23.3
	24				7	PULL #6
472.6						START 11:02
	25		ICL			END 11:18
						TIME 16min
	26		P.-BR, S-M.H, SL. num.		26.1	DRL 16min
						RAN 4.3
	27		SLK, BKN, occ mottled		8	REC 3.7 / TIDEP 27.1
						LOSS 0.6
	28		w/ gR -gngR, CL			UNACC 0.6 DEP 27.8
	29		dkgR. Above 28.0, smoothly			PULL #7
						START 11:25
	30		BKN 27.1-27.7, 31.1-31.8		29.7	END 11:45
						TIME 20min
	31		SLT below 32.3		9	DRL 20min
						RAN 4.9
	32					REC 4.9 UNACC Ø
						LOSS Ø TIDEP 31.7
	33				32.2	DEP 32.1
						PULL #8
	34				10	START 12:45
462.9			bottom HOLE		34.5	END 12:58
	35					TIME 13min LOSS Ø
	36					DRL 18min UNACC Ø
	37					RAN 2.5
	38					REC 2.3
	39					TDEP 39.9
	40					DEP 39.6
	41					
	42					
	43					
	44					

DRILLING LOG		DIVISION ORD			ORH-CD		OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO RI-1 STA 3+87A

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) RI 1/2

5. NAME OF DRILLER Dave Harper

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.0

8. DEPTH DRILLED INTO ROCK 33.8

9. TOTAL DEPTH OF HOLE 463.2

10. SIZE AND TYPE OF BIT 4YSV2

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 5

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/27/89 COMPLETED 2/28/89

17. ELEVATION TOP OF HOLE 497.0

18. TOTAL CORE RECOVERY FOR BORING 33.1 %

19. SIGNATURE OF INSPECTOR JMP

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE LT.GR., M.H, F-M.G. FLAGGY			PULL #1
496.0	1		Bd			START 1:15
	2		SLS GR, S-M.H, sh, occ		1	END 1:26 TIME 11min DRL 11min RAN 5.0
	3		Interbdd w/cls		3.5	REC 4.5
	4		cls, gr, s, sh 1.0-1.4			LOSS .5 UNRC .5
	5		3.2-3.5, 13.0 13.6		2	DEP+T/DEP 5.0 PULL #2 START 1:30
	6		22.3-22.8, BKN 1.2-1.9			END 1:47
	7		9.1-9.3 BKN PNS 0.4		7.3	TIME 17min DRL 17min
	8		SPACING, BKN 0.2-0.4			RAN 4.1 REC 4.1
	9		W/occ CLAY COATING		3	LOSS 0 T/DEP 9.1 UNACC 0
	10		1.4-2.9, 6.3-6.8, 10.7-11.0			DEP 10.0 PULL #3
	11		Cl/sls 5.7-6.8 below		10.9	START 1:57 END 2:15 TIME 18min
	12		22.8, sa /sls 13.6-15.7		4	DRL 18min RAN 4.1 REC 4.1 T/DEP 13.0
	13		4.7-5.2			LOSS 0 UNACC 0 DEP 19.1
	14				14.3	PULL #4
	15				5	START 2:35 END 2:48 TIME 13min
481.3	16		SANDSTONE gr, m.H. V.F.g, slt			DRL 13min RAN 4.0 T/D-D.17.0
	17				17.8	REC 3.7 UNACC 0.3 LOSS 0.3 DEP 18.0
477.9	18		SLS same as above gr,S.-m.H. Sh occ Interbdd w/cls		6	PULL #5 START 2:53 END 3:10
	19				CONT	TIME 17min DRL 17min RAN 3.5
	20		(CONT)			

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   (TRANSLUCENT)

PROJECT Gallipolis lock + Dam   HOLE NO. RI 1/2

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE	497.0			**Hole No.**	PI 1/2	

PROJECT	Gallipolis Lock & Dam	INSTALLATION	OEH-CD	SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS			PULL#5 T/DCP 20.5
	21				6	REC 2.6 LOSS 0.9 UNACC 0.9
	22				22.2	DCP 22.0 PULL#6
	23					START 7:20 END 7:45 TIME 25min
	24				7	DRL 25min PAN 5.0 REC 5.0
472.4						LOSS Ø UNACC Ø
	25		ICL		25.5	DCP 25.5 T/DCP 25.3
			R.BR, S.-M,H,Sh, num			PULL#7 START 8:00
	26		SLX, BKN MOTTLED W/			END 8:13 TIME 13min
	27		GR-GN,GR.) DKGR ABOVE		8	DRL 13min PAN 3.9 REC 3.5
	28		25.8			LOSS 0.4 UNACC 0.4
	29				29.4	T/DCP 29.9
	30					DCP 30.3 PULL#8
	31				9	START 8:23 END 8:43 TIME 20min
	32					DRL 20min PAN 3.7 REC 2.7
463.9	33		Bottom Hole		33.1	LOSS Ø T/DCP 33.1 UNACC Ø DCP 33.8
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67   (ER 1110-1-1801)   GPO 1990 OF-828-603

PROJECT	Gallipolis Lock & Dam	HOLE NO. PI 1/2

DRILLING LOG		DIVISION ORD		INSTALLATION ORH-CD			SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & DAM

2. LOCATION (Coordinates or Station) MONO RI 3 STA 4+92 A

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) RI 3/1

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.9

8. DEPTH DRILLED INTO ROCK 39.5

9. TOTAL DEPTH OF HOLE 463.4

10. SIZE AND TYPE OF BIT 4 Y5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 3/1/89 COMPLETED 3/1/89

17. ELEVATION TOP OF HOLE 497.9

18. TOTAL CORE RECOVERY FOR BORING 39.5

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.9			SANDSTONE			Pull #1
497.3			f, mg, m.h, sta br.gr			
	1		CLS/SLS		Box 1	START 1:30
	2		s.-m.h, m.-dk.gr			END 1:40
						TIME 10 min
	3					DRL 10 min
						RAN 5.1
494.1					3.8	REC 5.1
	4		SANDSTONE			LOSS Ø
492.8	5		sly, f.g, m.h., m.dk.gr		Box 2	UNACC Ø DEP 5.1
			CLS			Pull #2
	6		sly, m.-dk.gr, s-m.h.			START 1:50
			w/scat sm-m. nod			END 2:00
	7				7.5	TIME 10 min
	8					DRL 10 min UNACC Ø
						RAN —
	9				Box 3	REC 4.9
						LOSS Ø DEP 9.8
	10					Pull #3
487.1					10.8	START 2:10
	11		SLS/CLS			END 2:15
	12		s.-m.h., m.-dk.gr, occ sly		Box 4	TIME 5 min
			ang ptg w/slk @ 2.7			DRL 5 min
	13					RAN —
484.9					14.5	REC 4.8
	14		SS			LOSS Ø
483.4			sly, f.g, m.h., m.gr			UNACC Ø
	15		CLS/SLS		Box 5	DEP 14.6
	16		s.-m.h, m.-dk.gr, p.ts, sly			Pull #4
			w/occ sm. wed' fine			START 2:20
481.0			sandy lam.			END 2:40
	17		SANDSTONE			TIME 20 min
	18		sly, f.g., m.h, m.gr, occ newstd		19.0	DRL 20 min
479.5			vert. frac 16.9-17.6 grading		Box 6	RAN —
	19		SLS			REC 5.1
			sly, occ ss, s.-m.h, m.gr. w/			LOSS Ø
	20		sm. nod & ss. lens grading		(cont)	UNACC Ø
						CONT

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam   **HOLE NO.** RI 3/1

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 497.9   Hole No. RI 3/1

PROJECT: GALLIPOLIS LOCK + DAM

INSTALLATION: ORH-CD

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS (CON'T)		Box 6	DEP 20.1
	21					Pull #5
						START 2:45
					21.8	END 2:55
470.8	22					TIME 10 min
			CLS			DRL 10 min
	23		S.-m.h, m.dk.gr w/occ		Box 7	RAN —
			sm. wad grading			REC 5.0
	24					LOSS ∅
473.9						UNACC ∅
	25		ICL		25.1	DEP 25.1
	26		GREENISH GR - R-br,		Box 8	Pull #6
						START 3:00
	27		S.-m.h, sl.k grading			END 3:15
						TIME 15 min
	28		R.br @ 28.7			DRL 15 min
						RAN —
	29				28.9	REC 5.0
						LOSS ∅
	30				Box 9	UNACC ∅ DEP 30.1
	31					Pull #7
						START 3:30 LOSS ∅
	32					END 3:50 UNACC ∅
					32.3	TIME 20 min
	33				Box 10	DRL 20 min
						RAN —
	34					REC 4.9
463.9			Bottom Hole		34.5	DEP 34.5
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1990 OF - 620-603

PROJECT: Gallipolis Lock & Dam   HOLE NO. RI 3/1

DRILLING LOG	DIVISION ORD		INSTALLATION OPH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO RT 2 STA 3+87A

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) PI-2/1

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE ☒VERTICAL ☐INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ⊘ 497.0

8. DEPTH DRILLED INTO ROCK 33.8

9. TOTAL DEPTH OF HOLE 463.2

10. SIZE AND TYPE OF BIT 4 X5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 3/1/89 COMPLETED 3/1/89

17. ELEVATION TOP OF HOLE 497.0

18. TOTAL CORE RECOVERY FOR BORING 33.8

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE			PULL #1
495.7	1		f. m.g., m.h. sta. bk.gr Thin-m. bdd. 0.1 ∠ c 0.0 - 0.1		Box 1	START 1:00 LOSS 0.1
						END 1:10 UNACC 0.1
495.0	2		CL gr., s. PAT			TIME 10min
			SLS			DRL 10min
			sa, s.-m.h., m.gr IRR vert			RAN 4.1
493.8	3		hLd FRAC 2.0 - 2.8			REC 4.0
			CLS sky, s-m.h, m.dk.gr		3.8	DEP 9.1 T/DEP 9.0
493.0	4					
492.5			S.S. Lens			PULL #2
			CL gr. s. (1.2∠.c)			START 1:18
491.6	5					END 1:30 LOSS 0.3
					Box 2	TIME 12min UNACC 0.3
	6		SANDSTONE			DRL 12min
			sky, f.g. m.h, m.gr. bkn			RAN 3.0
	7		o, vert J.T. 7.4-8.0			REC 2.7 T/DEP 6.7
						DEP 8.0
489.0	8				8.0	PULL #3
			SLS			START 1:37
	9		s.-m.h, m.gr v e bkn			END 1:53
			(1.5 ∠ c)			TIME 16min
	10				Box 3	DRL 16min
486.6						RAN 5.0
	11		SANDSTONE			REC 3.5
			sky, f.g m.h. m.gr.			LOSS 1.5
	12					UNACC 1.5
483.7	13				13.0	T/DEP+DEP 13.0
			CLS sky, sky, s.-m.h. m.dk.gr.			PULL #4
	14				Box 4	START 1:58
482.7						END 2:12
	15		SANDSTONE			TIME 14min
						DRL 14min
	16		v e.sky, f.g, m.h, m-dk			RAN 5.0
					16.4	REC 5.0
	17		gr. mass grading		Box 5	LOSS ⊘
						UNACC ⊘
	18					DEP+T/DEP 18.0
						PULL #5
	19					START 2:18
						END 2:33
						TIME 15min
	20				18.9	DRL 15min (cont)

							SHEET 2 OF 2 SHEETS

PROJECT: Gallipolis Lock & Dam   INSTALLATION: OEH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.6	20		SANDSTONE			PULL #5
	21		SLS Sa, s-m.h, m.-dk.gr, PT3 shy 0.2Lc btwn 21.2 - 22.0		Box 6	RAN 4.0 REC 3.1 UNACC 0.2 LOSS 0.2
475.1	22		CLS/SLS shy, s.-m.h., m.-dk.gr.			DEP = 22.0 PULL #6 START 2:40
	23				23.6	END 2:52 TIME 12min
473.2	24		ICL			DRL 12min
	25		s.-mh, greenish gr-r.		Box 7	RAN 5.0 REC 5.0
	26		br., SLK; becoming R.br			LOSS 0 UNACC 0
	27		@ 27.0 1.6 L.C btwn 27.0		27.0	DEP 27.0 PULL #7
	28		& 31.6			START 3:00 END 3:15 TIME 15min
	29				Box 8	DRL 15min RAN 4.6
	30					REC 3.0
	31					LOSS 1.6 UNACC 1.6
	32				32.0	DEP 31.6 PULL #8 START 3:23 RAN 2.2
					Box 9	END 3:38 REC 2.2 TIME 15min LOSS 0
	33					DRL 15min UNACC 0
463.2			Bottom Hole		33.8	DEP 33.8
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD			INSTALLATION ORH-CD			SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam 15+26.5 B

2. LOCATION (Coordinates or Station) mono, LC5 STATION

3. DRILLING AGENCY W G Jaques

4. HOLE NO. (As shown on drawing title and file number) LC5/1

5. NAME OF DRILLER STEVE Fry

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 - 497.

8. DEPTH DRILLED INTO ROCK 450

9. TOTAL DEPTH OF HOLE 47

10. SIZE AND TYPE OF BIT 4 X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN Na | DISTURBED Na | UNDISTURBED Na

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER Na

16. DATE HOLE STARTED 11-28-88 | COMPLETED 11/28/88

17. ELEVATION TOP OF HOLE 497

18. TOTAL CORE RECOVERY FOR BORING 46.8 %

19. SIGNATURE OF INSPECTOR Mike Neal

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SS lt.gr. med hd, med, to f. g., mic. mech. bkn. 492.9 to 492.4			Pull #1
	1					START 8:21 End 8:31 Time 10 Drl 10 Ran 4.6 Rec 4.6 Loss 0 Unacc 0
	2				1	
	3					
	4				38	
	5					TI Depth 4.6 / TP Depth 4.9 / Pull #2
	6				2	START 8.49 Loss -0.2 End 8.56 unacc 0 Time 7 Drl 7 Ran 2.8 Rec 2.6
489.8	7		ICL r. br. s cl. occ gr. CLS len, lt gr. 489.8 - 489.5, Some core diamter loss to drill water		7.2	TI Depth 7.3 / TP Depth 7.4 / Pull #3
	8					START 9:20 Rec 3.5 End 9:25 Loss 1.5 Time 5 unacc 0 Drl 5 Ran 2.0
	9				3	TI Depth 9.4 / TP Depth 9.5
	10					Pull #4 START 10:01 Ran 2.3 End 10:07 Rec 1.4 Time .6 Drl .6 Loss 0.9
486.4	11		CLS reddish br to gn,gr,s, sh slk @ 486.3 - 485.8 Some core dimater loss Due To dr.ll water		10.9	TI Depth 11.00 / TP Depth 11.07
484.7	12					Pull #5 START 10:25 End 10:29 Time 14 Drl 14 Ran 4.6 Rec 2.5
	13		interbedded CLS r. br. to gn. gr. s sh., slk @ 486.3 & 485.8 SLS gr.s. to mod. hd. sh. grad sa. toward bottom mech. bkn 487. to 479.6 483.8 to 483.7, 479.7. to 479.6 Clay seam 478.7. 0.03 thick 478.2 0.05 Thick			
	14				14.4	Loss 2.1 unacc .6 TI Depth 14.4
	15					TP Depth 15.3
	16					Pull #6 START 10:58 End 11:17 Time 19 Drl 19 Ran 3.4 Rec 4.4 Loss 1.0
	17				5	
	18					
	19				18.5	TI Depth 18.5 / TP Depth 18.7
	20				6	

G FORM 1836 APR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Locks & Dam **HOLE NO.** LC5/1

PROJECT *Gallipolis Lock and Dam*   INSTALLATION *ORH-CD*

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.4						Pull # 7
	21		SS gr. to lt gr mod hd., mod. f. g. gradational w/f @ top mod. g toward. bottom cross bd.		6	START 12.11 End 12.22 Time 11 Drl 11 Ran 4.9 Rec 4.1 Loss 0.8 unacc
	22				22.1	TiDepth 21.8
	23		Sh. s com @ 472.4 + 469.7 fr. sta bdd pl. @ 455.4.			TP Depth 23.6
	24				7	Pull #8 START 12.48 End 1.03 Time 15 Drl 15
	25				25.5	Ran 6.7 Rec 7.4 Loss 0.7 unacc 0
	26					
	27					
	28				8	
	29				29.2	Ti Depth 28.6
	30					TP Depth 30.6
	31				9	Pull # 9. START 1.26 End 1.36 Time 10 Drl 10
	32				32.8	Ran 9.6 Rec 8.8 Loss 08 unacc 0
	33					
	34					
	35				10	
	36				36.6	
	37					Ti Depth 37.0
	38					
	39				11	
	40				40.3	TP Depth 39.9 Pull #10
	41					START 2.00 End 2.15 Time 15
	42				12	Drl 15 Ran 9.0
	43				43.4	Rec 9.8 Loss 08
	44				13	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV-ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g

PROJECT: Gallipolis Lock & Dam
INSTALLATION: ORA-CD
SHEET 5 OF 5 SHEETS

ELEVATION	DEPTH				BOX/SAMPLE	REMARKS
	45					
	46					
450	47				47.0	TI Depth 46.8
	48					
	49					TP Depth 48.9
	50					

1. PROJECT **Gallipolis Locks + Dam**	10. SIZE AND TYPE OF BIT **4 X 5.5"**	
2. LOCATION (Coordinates or Station) **MONO STA**	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) **M.S.L.**	
3. DRILLING AGENCY **W.G. JAQUES**	12. MANUFACTURER'S DESIGNATION OF DRILL **B- Mobile**	
4. HOLE NO. (As shown on drawing title and file number) **LC-18/1**	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED **N/A** / UNDISTURBED **N/A**
5. NAME OF DRILLER **STEVE FRY**	14. TOTAL NUMBER CORE BOXES **13**	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER **N/A**	
	16. DATE HOLE STARTED **1/11/89** COMPLETED **1/11/89**	
7. THICKNESS OF OVERBURDEN **495.0**	17. ELEVATION TOP OF HOLE **4950**	
8. DEPTH DRILLED INTO ROCK **38.9**	18. TOTAL CORE RECOVERY FOR BORING **38.9** %	
9. TOTAL DEPTH OF HOLE **446.1**	19. SIGNATURE OF INSPECTOR **L.MD.**	

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
4950			CLS			PULL #1
	1		DK.-M. gr, S.-m.h.			START 6:05
			V. bkn. w/s. 20.			END 6:20
						TIME 15 min
			0.0-3.9 w/ 1.6 LC			DRL 15 min
	2					RAN 5.0
			: U.S., gr., 5.4-		Box 1	REC 2.8
			6.9			LOSS 1.6
	3					UNACC 0
	4					T/DEP 4.6
	5					DEP 5.0
					5.4	PULL #2
	6					START 6:30
						END 6:41
						TIME 11 min
					Box 2	DRL 11 min
488.1						RAN 4.6
	7		SANDSTONE			REC 3.5
						LOSS 0
	8		M. C.-g., m.h.,			UNACC 0
			m. gr 0.1 S. gr.			T/DEP 8.1
			CL 10.8-10.7		8.9	
	9				Box 3	DEP 9.6
						PULL #3
	10					

PROJECT GALLIPOLIS LOCK & DAM   INSTALLATION ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SANDSTONE		Box 3. CONT.	PULL # 3
						START 8:00
484.2						END 8:07
	11		CLS			TIME 7 min
						DRL 7 min
			SLY, M. dK. gR.,			RAN 3.6
						REC 4.2
	12		S. - M. h. bKN.,			LOSS Ø
					12.3	UNACC Ø T/DEP 12.3
			S. @ 12.9 CONTACT			
482.1						DEP 13.0
	13		SLS			PULL # 4
					Box 4.	
			SA, M.h., M. gR			START 8:27
	14					END 8:41
			MECH. PTGS @ 17.4,			TIME 14 min
						DRL 14 min
			17.8, 18.4: bKN.			RAN 4.3
	15					REC 3.6
			ALONG SMOOTH PTG			LOSS Ø
						UNACC Ø
			@ 19.1: WEA HOR		15.9	T/DEP 15.9
	16					
			PTG. @ 20.1 & 20.5			
	17				Box 5.	DEP 17.9
						PULL # 5
	18					START 8.55
						END 9:07
						TIME 12 min
						DRL 12 min
	19					RAN ?
						REC 5.0
						LOSS Ø
					19.7	UNACC Ø
	20				Box 6	
474.1						DEP ? T/DEP 20.9
	21		SANDSTONE			PULL # 6
	22		(CONT.)		CONT.	(CONT.)

PROJECT GALLIPOLIS LOCK + DAM | INSTALLATION ORH-CD

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	22				Box 6.	
			SANDSTONE			
					22.8	
	23		SLY., f.g., m.h.,			PULL #6
			M. GR. w/ SLS ZOS			START 9:20
	24		HOR. PTG @ 21.7		Box 7.	END 9:37
						TIME 17 MIN
			M. SPACED MECH.			DRL 17 MIN
	25		P+GS. throughout			RAN ?
						REC 5.0
			SEV. OVERCORE AREAS			LOSS 0.0
						UNACC 0.0
	26					
					26.6	
	27					
	28				Box 8	
	29					
						T/DEP 29.3
	30					
					30.3	DEP 30.5
	31					PULL #7
					Box 9.	
	32					
	33					
	34		(CONT.)		34.0	(CONT.)

PROJECT				INSTALLATION			SHEET 4
Gallipolis Lock + Dam				*OEH-LD*			OF 5 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV-ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	34					
			SAND STONE			Pull #7
	35		Sky., F.g., m.h., m.gr			START 9:50
			w/ Sls. zos. hor.		Box 10.	END 10:05
						TIME 15 min
	36		PTg @ 21.7 m.spaced			DRL 15 min
						RAN ?
			mech. PFgs			REC 10.2
	37		Through out. Sev			LOSS Ø
			OVER CORE AREAS.		37.7	UNACC Ø
	38					
						T/DEP 38.7
	39					DEP 39.3
					Box 11.	Pull #8
	40					START 10:20
						END 10:35
						TIME 15 min
	41				41.4	DRL 15 min
						RAN 10.2 (??
	42					REC 9.6
						LOSS Ø
						UNACC Ø
	43				Box 12.	
	44					
	45				45.2	
					Box 13	
	46		(CONT)		CONT.	(CONT)

| PROJECT GALLIPOLIS LOCK & DAM | INSTALLATION OEH-CD | SHEET 5 OF 5 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	46		SANDSTONE			Pull #8
	47				Box 13.	
	48					T/DEP 38.0
446.1	49		Bottom Hole		48.9	DEP 38.9
	50					

ENG FORM 1836-A
JUN 67

GPO 1969 OF—329-243

| PROJECT GALLIPOLIS LOCK & DAM | HOLE NO. LC-1811 |

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) STA 12+46.41

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) LC. 24/1

5. NAME OF DRILLER David Harper

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 497.1

8. DEPTH DRILLED INTO ROCK 47.1

9. TOTAL DEPTH OF HOLE 47.1

10. SIZE AND TYPE OF BIT

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL "B" 53

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 13

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/23/89 — COMPLETED 12/23/89

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 47.1 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SS gr. to lt. gr. mod. hd. med. to c.g. slightly mic. Sur. fr. staining 497.1-496.9 Cl. str. 496.1-496.0 (mod. bkn.) 488.8-488.6 (sh.)		1	Pull # 1 — START End Time Drl Ran Rec Loss unacc — TP 3.1 — 3.7
	4 5 6 7				2	TI 4.6 — Pull # 2 — START End Time Drl — TP 5.9 — Ran Rec Loss unacc — 7.1
	8 9 10 11 12				3 4	TI 7.8 (TP 7.8) — Pull 3 — START End Time Drl — Ran Rec Loss unacc — TI 8.9 — Pull #4 — START 9:05 End 9:35 Time 5 Drl 5 — 10.7 — Ran 9.0 Rec 5.6 Loss 0 unacc 0 — TI & TP 12.8
484.3	13 14 15 16 17 18 19		SLS. gr. to gn.gr. S to med. hd. grad. w/Cl @ top to S. @ bot — Interbdd CLS (gr S occ. w/fatty CL) 483.5-483.4, 483.2-483.0, 478.8-478.7 — Sev. to mod bkn. SLS. w/ intbdd CLS & fatty CL. w/ poss 1.1 loss 483.0-480.3 fatty Cl seams 479.8, 479.5, 479.0 bkn. pl. w/ spacing		5	Pull # 5 — TP 13.0 — START 9:22 End 9:35 Time 13 Drl 13 — 14.1 — Ran 4.4 Rec 0.9 Loss 0 unacc 0 — TI 17.2 — Pull # 6 — START 9:53 End 9:59 Time 8 Drl 8 — TP 17.4 — 18.4 — Ran 0.6 Rec 3.7 Loss 1.1 — TI 17.8 unacc 1.1

PROJECT Gallipolis Lock + Dam				INSTALLATION ORH-CD			SHEET 2 OF 3 SHEETS
ELEVATION a	**DEPTH** b	**LEGEND** c	**CLASSIFICATION OF MATERIALS** (Description) d		**% CORE RECOV-ERY** e	**BOX OR SAMPLE NO.** f	**REMARKS** (Drilling time, water loss, depth of weathering, etc., if significant) g

Elevation	Depth	Legend	Classification	Recovery	Box/Sample	Remarks
	21				21.1	Pull # 7 START 10.11 End 10.24 TP 20.7 Time 16 Loss 0 Drl 16 unacc 0 Ran 9.5 Rec 9.3 TI 21.3
474.7	22		–			Pull # 8
	23		SS. gr. to lt.gr. med. hd. fine to med. gl. mic		7	START 10.44 End 11.00 Time 16
	24		few small hd. pyritic nod. a flahs : 473.0 - 472.0 num. mic bdd.			Drl 16 Ran 8.5 Rec 8.8
	25		pl. chan. 465.0		25.7	Loss 0 unacc 0
	26		Cal cemt 464.5 - 463.1 461.8 - 461.5			
	27		456.2 .455.8 449.0 448.7		8	
	28					
	29				29.1	
	30					TI 29.8 TP 29.5 Pull #9
	31				9	START 10.15 End 11.41
	32				32.6	Time 26 Drl 26
	23					Ran 1.7 Rec 1.7 Loss 0
	34				10	unacc 0
	35					
	36				36.3	
	37					
	38				11	
	39					TI & TP 39.4
	40				39.9	Pull # 10
	41					START - 12.45 End 1:07 Time 22
	42				12	Drl 22 Ran 18.0 Rec 10.1
	43				43.4	Loss 0 unacc 0

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 470.0

Hole No. LC. 24/1

PROJECT Gallipolis Lock & Dam

INSTALLATION ORH-CD

SHEET 3 OF 5 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	45				13	
	46					
450	47				46.7	
	48					
449.3	49					TI & TP 49.5
	10					

1. PROJECT _Gallipolis Lock & Dam_	10. SIZE AND TYPE OF BIT
2. LOCATION (Coordinates or Station) _11+8+1_	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _MSL_
3. DRILLING AGENCY _W G Jaques_	12. MANUFACTURER'S DESIGNATION OF DRILL _"B" 57_
4. HOLE NO. (As shown on drawing title and file number) _496.8_	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED _N/a_ — UNDISTURBED _N/A_
5. NAME OF DRILLER _Norris_	14. TOTAL NUMBER CORE BOXES _13_
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.	15. ELEVATION GROUND WATER _N/a_
	16. DATE HOLE — STARTED _12-23-88_ — COMPLETED _12-23-88_
7. THICKNESS OF OVERBURDEN _496.8_	17. ELEVATION TOP OF HOLE _496.8_
8. DEPTH DRILLED INTO ROCK _46.8_	18. TOTAL CORE RECOVERY FOR BORING _46.8_ %
9. TOTAL DEPTH OF HOLE _46.8_	19. SIGNATURE OF INSPECTOR _JET_

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
496.8			SS lt gr. to gr. mod. hd. f to c. gr. mic. bkn pl w/ 0.3 spacing 496.8-495.0 c. gr. 492.2-490.1 / f to med g. above & below) Clay stringers; 491.4, 491.0 490.1. Cal. cemt. 483.8. 483.0 mech chipped. 482.0-481.8		1	Pull # 1 START 18.15 End 18.30 Time 15 Drl 15 Ran 5.0 Rec 5.1 Loss ⌀ Unacc ⌀
	1					
	2					
	3				3.7	
	4					
	5				2	TI & TP 5.0 Pull #2
	6					START 18.35 End 19.05
	7				7.1	Time 30 Drl 30
	8					Ran 10.1 Rec 9.7
	9				3	Loss ⌀ Unacc ⌀
	10				10.7	
	11					
	12				4	
	13					
	14				14.3	
	15					TP 14.8 TI 15.1 Pull #3
	16				5	START 19.15 End 19.45
480.3						Time 30
479.7	17		SLS gn.gr. s to med hd s. intbdd w/ f g. ss below 480.			Drl 30 Ran 5.9
478.8	18		SS gr. mod hd. f.g.		17.9	Rec 6.2 Loss ⌀
477.9			SLS gr to gn.gr. s to med hd. 6. Sh. to Cl 478.5. 476.1 bkn 478.5-478.6			Unacc ⌀
	19		SS		6	

| | | | | | | SHEET 2 OF 9 SHEETS |

PROJECT Gallipolis Lock & Dam   **INSTALLATION** ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21		SS lt gr. med hd. f to med gr. mic sls. stringers 474.6 few occ small pyrite Nod. 477.9 475.5 thin cl str. 472.5, -472.3, 470.4 Sl 472.5 - 472.3 small cls frag. 470.9 cal cemented 465.9-465.8 Num mic bdd pl. band. 462.8, 462.4, 461.6 461.5, 460.7-460.6 455.0 458.8, 452.0-451.9, 451.0		6	TI & TD 21.0
					21.5	Pull #4
	22					START 20.30
						End 21.00
	23				7	Time 30
						Drl 30
	24					Ran 6.7
						Rec 7.2
	25				25.1	Loss 0
						unacc 0
	26					
	27				8	
	28					TD 27.7
					28.7	TI Depth 28.2
	29					Pull #5
						START 21.55
	30					End 22:25
					11	Time 30
	31					Drl 30
						Ran 7.7
	32					Rec 7.1
					32.5	Loss 0
	33					Unacc 0
	34				10	
	35					TD 35.2
					35.9	TI 35.5
	36					Pull #6
	37					START 21:45
						End 22.10
	38				1.1	Time 35
						Drl 35
	39					Ran 9.9
					39.3	Rec 10.5
	40					Loss 0
						Unacc 0
	41				12	
	42					
	43				43.1	

				ELEVATION TOP OF HOLE				Hole No. *LC 29/1*	

ELEVATION TOP OF HOLE: *496.8*

Hole No. *LC 29/1*

PROJECT: *Gallipolis Lock & Dam*

INSTALLATION: *ORH-CD*

SHEET *2* OF *5* SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	44				13	
	45					*TP 45.3*
	46					*TI 45.8* *Pull #7*
	47				46.8	*START 22.35* *End 22.55* *Time 20* *Drl 20* *Ran 1.7* *Rec 1.7* *Loss 0* *unacc 0*
	48					
	49					
	50					
451.2	51					*TI+TP 47.5*

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF SHEETS

1. PROJECT *Gallipolis Lock & Dam*

2. LOCATION (Coordinates or Station) *0+ 67.59 B Mono LC 33.1*

3. DRILLING AGENCY *W G Jaques*

4. HOLE NO. (As shown on drawing title and file number) *LC. 33/1*

5. NAME OF DRILLER *Wayne Tice*

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN *497.0*

8. DEPTH DRILLED INTO ROCK *38.0*

9. TOTAL DEPTH OF HOLE *38.0*

10. SIZE AND TYPE OF BIT

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) *MSL*

12. MANUFACTURER'S DESIGNATION OF DRILL *"B" 57*

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED *NA* UNDISTURBED *NA*

14. TOTAL NUMBER CORE BOXES *11*

15. ELEVATION GROUND WATER *NA*

16. DATE HOLE STARTED *2-6-89* COMPLETED *2-6-89*

17. ELEVATION TOP OF HOLE *497.0*

18. TOTAL CORE RECOVERY FOR BORING *38.0* %

19. SIGNATURE OF INSPECTOR *JET*

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0	1–2		SS. lt. gr. mod hd. to hd. to c.g., Fe stained & bedding bkn pl 0~1' spa. 0.0-1.5		1	Pull #1 / START 14:10 / END 14:20 / TIME 10min / DPL 10min / PAN — / REC 5.2 / LOSS Ø / UNACC Ø
494.2	3–4		SLS. gr s to med hd. sh. bkn. 3.0-3.1 47.- 4.9 5. 2.8-3.4 c/s gr. s. sh. 4.1-4.7		3.6	
491.8	5					TI 5.2 TP 5.0
	6–7		SS gr. to lt. gr. med hd. f.g. ang. pl. w/cl Coating ~30°: 5.5-5.7, 6.1-6.3 Calcueous cem. 6.3-6.8		2 / 7.1	Pull #2 / START 14:30 / END 14:38 / TIME 8min / DRL 8min / PAN / REC 5.0 / LOSS Ø / UNACC Ø
489.6	8–14		CLS gr. s. sh. grad. becoming more silty w/depth. occ. ang. pl. ~30° bkn. 9.0-9.4, 10.7.-11.1, 13.3 13.5 ang. pl. w/cl coating 45° 9.9-10.2 SLS gr. s. sh. 10.2-10.7 slt. below 13.0 ang. pl. ~30° w/slk. 12.4-12.5		3 / 10.9 / 4 / 14.4	TI 10.1 TP 10.0 / Pull #3 / START 14:50 / END 15:00 / TIME 10min / DPL 10min / PAN — / REC 3.1 / LOSS Ø TP 13.3 / UNACC Ø
482.	15–19		SLS gr. s. to mod hd sh. s. 15.0-17.4 Vert frac. 15.0-17.2 CLS gr. s. sh. 20.9-21.2 23.5 25.0 bkn. 22.1 22.3 ang. pl. w/s/kn 20.5-20.7		5 / 18.1 / 6	TI 15.1 / Pull #4 / START 15:13 / END 15:20 / TIME 7min / DRL 7min / PAN 3.4 UNACC Ø / REC 3.6 / LOSS Ø TP 18.4 / TI 18.6 / Pull #5 / START 330 REC 1.0 / END 351 LOSS Ø / TIME Ø UNACC Ø / DPL Ø TP 19.8 / PAN 1.4

DRILLING LOG (Cont Sheet) ELEVATION TOP OF HOLE **497.0** Hole No. **LC-33/1**

PROJECT Gallipolis Lock & Dam			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Ti 20.1 Pull #6
	21				21.2	START 3:50
						END 4:07
	22					TIME 17 min
						DRL 17 min
	23				7	RAN 5.2
						REC 5.2
	24					LOSS 6
						UNACC 0
					24.6	
471.8	25				Ti 25.1	Tp 25.0
			ICL. dk gr. to r. br.			Pull #7
	26		s to med. hd. sh.		8	START 4:10
			occ s/k dk. gr. above			END 4:45
	27		28.8 r. br. below 28.8			TIME 35 min
			Sev. bKn. 29.9 - 31.4			DRL 35 min
	28		occ. mot.		28.1	RAN 9.9
						REC 9.9
	29					LOSS 0
					9	UNACC 0
	30					Tp 30.2
						Pull #8
	31					START 5.00
					31.4	END 5.30
	32					TIME 30 min
						DRL 30 min
	33					RAN 9.3
					10	REC 9.3
	34					LOSS 0
						UNACC 0
					34.5	Dep 34.5
	35					Pull #9
						START 5.40
	36					END 6.10
						TIME 30 min
	37				11	DRL 30 min
						RAN 0
458.9	38					REC 4.6
						LOSS 0
						UNACC 0
					38.8	Dep 38.8

ENG FORM 1836-A (ER 1110-1-1801) JUN 67 GPO 1980 OF - 628 - 603

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD	SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO LC-91 STA 143RA

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) LC 41/1

5. NAME OF DRILLER Dennis Thompson

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0.0 496.1

8. DEPTH DRILLED INTO ROCK 39.8

9. TOTAL DEPTH OF HOLE 456.3

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/9/89 COMPLETED 2/10/89

17. ELEVATION TOP OF HOLE 496.1

18. TOTAL CORE RECOVERY FOR BORING 39.8

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.1			SLS			Pull #1
	1		gR, m-H.gR w/zones (LRM)		Box 1	START 21:40
			of sandstone, bkn, shaley			END 22:05
	2		grad contact			TIME 25min
						DRL 25min
						RAN 4.8
493.1	3					REC 4.8
						LOSS 0
			SANDSTONE		3.7	UNACC 0
	4		m.h.gR P.g. mass			
	5		0.6 hR iRR FRAC ≥6.4		Box 2	DEP+T/DED 4.8
						Pull #2
	6					START 22:15
						END 22:32
	7				7.2	TIME 17min
488.9						DRL 17min
			CLS/SLS			RAN 5.0
	8				Box 3	REC 5.0
	9		Interbdd, m.h.gR			LOSS 0
						UNACC 0
	10		flaggy -mass 0.1 bkn			DEP+T/DEP 5.0
					10.7	Pull #3
	11		zo 10.2 0.7 scfrR		Box 4	START 22:45
	12					END 23:00
						TIME 15min
	13		bkn cLS @ 17.7 grading			DRL 15min
	14				14.2	RAN 4.9 UNACC 0
			grading from cLS to IcL			REC 4.9
	15					LOSS 0
					Box 5	DEP-T/DEP 4.9
	16					Pull #4
						START 7:27
	17					END 8:01
					17.7	TIME 39 min
	18				Box 6	DRL 34min
	19					RAN 5.1
						REC 5.1
	20		(cont)		(cont)	LOSS 0
						UNACC 0
						DEP+T/DEP 5.1

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 496.1					Hole No. LG-41/1
PROJECT Gallipolis Lock & Dam	INSTALLATION ORH-CD					SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS/SLS		Box 6	PULL #5
	21				21.3	START 8:12 END 8:30
	22				Box 7	TIME 18 min DRL 18 min RAN 5.2
	23					REC 5.2 LOSS 0
	24					UNACC 0
471.1	25				25.0	DEP+T/DEP 5.2
	26		ICL Wh, SLK-OR-to RED fairly MASS 0.6 LOSS 29.4 - 34.8		Box 8	PULL #6 START 8:45 END 9:16 TIME 31.0 min LOSS 0
	27					DRL 31.0 min UNACC 0
	28				28.0	RAN 4.4 REC 4.4
	29					DEP+T/DEP 4.4
	30				Box 9	PULL #7 START 9:28 END 10:06 TIME 38 min
	31					DRL 38 min
	32				32.5	RAN 5.4
	33					REC 4.8 LOSS 0.6
	34				Box 10	UNACC 0.6 T/DEP 4.8
	35					DEP 5.4 PULL #8
	36				36.5	START 12:22 END 12:45 UNACC 0 TIME 23 min
	37					DRL 23 min
	38				Box 11	RAN 5.0 REC 5.0
	39					LOSS 0
456.3			BOTTOM HOLE		39.8	T/DEP+DEP 39.8
	40					
	41					
	42					
	43					
	44					

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PROJECT Gallipolis Lock & Dam	HOLE NO. LG-41/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
Mono LC-49 Sta 3+55.06 A

3. DRILLING AGENCY
W. G. Jacues

4. HOLE NO. (As shown on drawing title and file number) LC-49/1

5. NAME OF DRILLER
Dave Harper

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.7

8. DEPTH DRILLED INTO ROCK 38.8

9. TOTAL DEPTH OF HOLE 958.9

10. SIZE AND TYPE OF BIT 4xSV₂

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/10/89 COMPLETED 2/10/89

17. ELEVATION TOP OF HOLE 497.7

18. TOTAL CORE RECOVERY FOR BORING 38.5 %

19. SIGNATURE OF INSPECTOR FMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.7			SLS			PULL #1 START 8:22 END 8:35 TIME 13 min
496.3	1		GR.S - M.H. Sh bkn w/0.1 spacing			DRL 13 min
	2		SANDSTONE gr, M.H., F-VF.F.G. SLT		1	RAN 3.4 REC 2.9 LOSS 1.0 UNACC 1.0
	3		SLS gr, m.H, S, 3.4-3.7			DCD+T/D@P 3.4
	4				4.2	PULL #2 START 9:40 END 9:55 TIME 15 min
492.2	5					DRL 15 min
	6		SLS/CLS			RAN 4.6
	7		SLS, gR,S-m.H, Sh 5.5-5.8 6.3-7.2 8.0 CLS gR,S, Sh, 5.8- 6.3, 7.2-8.0 Bkn 5.8-5.9, 6.5-		2	REC 4.2 LOSS 0.4 UNACC 0.4
489.7	8		6.6, 6.9-7.2		8.0	T/D@P8.0
	9		SLS gR. S, -m.H, Sh, cl			D@P 8.9 PULL #3 START 10:15 END 10:35 TIME 20 min
	10		8.4-10.5, 10.8-11.0 Sa R.5-		3	DRL 20 min
	11		15.5 cl cooling RN 19.2			RAN 4.4
	12				11.7	REC 4.3 LOSS 0.1 T/D@P 12.9 UNACC 0.1 D@P 12.8
	13					PULL #4 START 10:47
	14				4	END 11:05 TIME 18 min DRL 18 min
	15				15.3	RAN 3.6
	16					REC 3.5 T/D@P 16.0 LOSS 0.1
	17				5	UNACC 0.1
	18					D@P 17.4 PULL #5 START 11:20
	19				19.0	END 11:37 TIME 17 min
					6 (cont)	DRL 17 min T/D@P R.C RAN 3.2
	20		(cont)			REC 3.1 (cont)

| | | | | | | SHEET 2 OF 2 SHEETS |

PROJECT Gallipolis Lock + Dam **INSTALLATION** OPH-CD

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	20		SLS			PULL #5
						LOSS 0.1
	21					UNACC 0.1
						DEP 21.0
					6	PULL #6
						START 12:25
475.7	22					END 12:40
			CLS			TIME 15 min
			9R. S, Sh		22.6	DRL 15 min UNACC 0
	23					RAN 4.6
						REC 4.6
973.9						LOSS 0
						DEPTH/DEP 23.6
	24		ICL		7	PULL #7
						START 12:56
	25		R.BR, S-M.H. Sh, occ SLK			END 1:10
						TIME 14 min
	26		occ mottled, securely			DRL 14 min
					26.2	RAN 4.7
	27		RKW 25.9-26.2, 33.1-33.4			REC 4.7
						LOSS 0
	28		33.8-34.3, 36.8-37.1		8	UNACC 0
						7 DEP 28.5
	29		37.7-37.9, dk gR, NBCUE			DEP 28.3
					29.0	PULL #8
	30		25.5			START 1:25
						END 1:48
	31					TIME 23 min
					9	DRL 23 min
	32					RAN 4.9
						REC 4.5
	33					LOSS 0.4
						UNACC 0.4
						DEP 33.5 T/DEP 33.9
	34				33.8	PULL #9
						START 2:04
	35					END 2:30
					10	TIME 26 min
	36					DRL 26 min
						RAN 5.1
	37					REC 4.9
					37.7	LOSS 0.2
					11	UNACC 0.2
459.2	38		Bottom Hole		39.5	T/DEP 38.5
						DEP 38.0
	39					
	40					
	41					
	42					
	43					
	44					

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DRILLING LOG	DIVISION *ORH*	INSTALLATION *ORH-CD*	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono LC-54 STA. 4+10.8 A

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. LC-54

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 - 497.0

8. DEPTH DRILLED INTO ROCK 38.9

9. TOTAL DEPTH OF HOLE 458.1

10. SIZE AND TYPE OF BIT 4 7/8"

11. DATUM FOR ELEVATION SHOWN M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/27/89 COMPLETED 2/27/89

17. ELEVATION TOP OF HOLE 497.0

18. TOTAL CORE RECOVERY FOR BORING 38.9

19. SIGNATURE OF INSPECTOR LMD

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS
497.0			CLS / Shy, s.-m.h, m.-dk.gr		Box 1	PULL #1 START 10:40 END 10:50 TIME 10min DRL 10min RAN 4.9
494.-	1-2			3.6		REC 4.9 LOSS 0 UNACC 0 DEP 9.9
	3-5		SANDSTONE shy, f.g, m.h, m.gr. grading shy w/dep		Box 2	PULL #2 START 11:00 END 11:10 TIME 5min DRL 5min
491.5	6-10		CLS/SLS s.-m.h, m.-dk.gr. w/occ sm. nod P.br. 8.3-8.8 .03 Sandlens 10.1-10.4 11.5-11.7, 11.8-12.6	7.2	Box 3	RAN 5.1 REC 5.1 LOSS 0 UNACC 0 DEP 10.1
	11-15			10.9	Box 4	PULL #3 START 11:20 END 11:25 TIME 5min DRL 5min RAN 5.1 REC 5.1
481.8	15			14.7		LOSS 0 UNACC 0 DEP 15.2
	16-18		SLS shy, sa, m.h, m.gr, sm SLKS @ 15.9 p.g, sm slk surface @ 16.3 grading sa @ 17.3 w/sm interval	18.0	Box 5 Box 6	PULL #4 START 11:30 END 11:40 TIME 10min DRL 10min RAN 5.0 REC 5.0
478.0	19		slk; surfaces/icl lens 19.0-19.3			LOSS 0
477.7			ICL -s.m.h, P.br, slk			UNACC 0
	20		SLS (cont.)		cont	(cont)

						SHEET 2

PROJECT **Gallipolis Lock & Dam**   INSTALLATION **ORH-CD**   OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	DEP 20.2 Pull #5
	21		S.m.h. m.-dk.gr			START 12:25
475.4			Grading		21.4	END 12:45
	22		ICL			TIME 20 min
			GREENISH GRAY - R.GR,		Box 7	DRL 20 min
	23		SLK s.m.h			RAN 5.0
	24					REC 5.0
			BECOMING R.br			LOSS Ø
			@ 23.0			UNACC Ø
	25				25.0	DEP 25.2
	26					Pull #6
					Box 8	START 12:55
	27					END 1:20
						TIME 25 min
	28				28.3	DRL 25 min
						RAN 4.8
	29					REC 4.8
						LOSS Ø
						UNACC Ø
	30				Box 9	DEP 30.0
	31					Pull #7
						START 1:25
	32				31.9	END 1:40
						TIME 15 min
	33					DRL 15 min
					Box 10	RAN 4.6
	34					REC 4.6
						LOSS Ø
	35					UNACC Ø
					35.5	DEP 34.6
	36					Pull #8
						START 1:50
	37				Box 11	END 2:10
						TIME 20 min
	38					DRL 20 min
						RAN 4.3
458.1	39		Bottom Hole		38.9	REC 4.3
	40					LOSS Ø
	41					UNACC Ø
	42					DEP 38.9
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1980 OF - 628-603   PROJECT **Gallipolis Lock & Dam**   HOLE NO. **LC-54/1**

DRILLING LOG	DIVISION ORD	INSTALLATION OR H-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4x5½
2. LOCATION (Coordinates or Station) mono MC.7/1 Sta 14+83.8B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY W G Jaques	12. MANUFACTURER'S DESIGNATION OF DRILL B-57 mobile
4. HOLE NO. (As shown on drawing title and file number) MC 7/1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED NA — UNDISTURBED NA
5. NAME OF DRILLER David Harper	14. TOTAL NUMBER CORE BOXES 14
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER NA
	16. DATE HOLE — STARTED 1-29-88 — COMPLETED 1-29-88
7. THICKNESS OF OVERBURDEN 496.6	17. ELEVATION TOP OF HOLE 496.6
8. DEPTH DRILLED INTO ROCK 46.6	18. TOTAL CORE RECOVERY FOR BORING 46.6 %
9. TOTAL DEPTH OF HOLE 46.6	19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6			SS lt. gr mod. hd., med.f g., occ mica, δ g. above 495.5 mech bkn. 496.6 - 476.3 bdd pl cl coated 496.1		1	Pull #1 START 8:12 End 8:22 Time 10 Drl 10 Ran 5.1 Rec 5.1 Loss 0 unacc 0
	1					
	2					
	3				3.6	
	4					
	5					TP & TL 5.1 Pull #2
	6				2	START 836 Rec 2.3 End 8.45 Loss 0.1 Time 9 unacc 00 Drl 9 Ran 2.2
489.2	7				7.1	TL & TP Depth 7.3
	8		ICL. r. br. s. to very s. cl. occ mot. w/ lt gr. gn. bn. cl. occ lt. gr. 488.8 488.5 core loss due to wash. or elongation sel. bkn. 486.0 - 486.6		3	Pull #3 START 8.57 Loss +1.4 End 9.12 unacc 0 Time 15 Drl 15 Ran 2.1 Rec 1.4
	9				8.9	
485.9	10					TL Depth 9.4 TP 9.3 Pull #4 START 9.42 Rec 1.6 End 9.51 Loss 0.4 Time 9 unacc 00 Drl 9 Ran 2.0 TP 11.0
	11		CLS. gr. to lt gr. occ Fe. rec. sev. bkn. 485. 484.6			TL Depth 11.4
484.6	12				12.0	START 10.20 Pull #5 unacc 0 End 10.27 Ran 1.0 Time 7 Rec 1.0 TP 12.0 Drl 7 TL Depth 12.4
	13		SLS. gr. s. med. ha., s. grain. int. ss & botton. r. sh., seams 481.9, 481.0, 479.0, 475.9. 473.7. Mech. spin loss @ 477.8 .0.5 Loss sh. 475. to 474.2 w/ num cl seams sev. mech. bkn. @ 473.6 473.3		5	Pull #6 START 10.44 End 10.59 Time 15 Drl 15 Ran 3.0 Rec 3.0 Loss 0 unacc 0 TP Depth 15.0
	14					
	15				15.6	
	16					TL depth 16.0 Pull #7 START 11.16 Loss 0.5 End 11.23 unacc 0 Time 7 Drl 7 Ran 3.2 Rec 3.5
	17				6	
	18					TL ? ?
	19					TL depth 18.9 Pull #8 START 12-14 Ran 1.2 End 12.22 Rec 0.7 Time 8 Loss 0.5 Drl 8 unacc 0.5

PROJECT Gallipolis Lock & Dam | HOLE NO. MC 7/1

| PROJECT _Gallipolis Lock & Dam_ | | INSTALLATION _ORH CD_ | | SHEET _2_ OF _9_ SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21				7	TP 19.7
						Ti Depth 20.9
						Pull #9
	22					START 12:40
						End 12.55
						Time 15
						Drl 15
						Ran 33
_473.6_	23				23	Rec 33
						LOSS 0
			ss. gn to lt gr mod			unacc 0 TP 23.6
	24		hd. f. to med. g. mic		8	Ti Depth 23.6
			grad. w/ f g. @ top.			Pull #10
	25		med. g. @ bot., occ			START 1:17
			x-bdd. pl. t. cl seams.			End 1:29
	26		471.5, 471.2 & 470.6 @			Time 12
			0.3" thick		26.5	Drl 12
	27		mech. bkn. 468.6-468.5			Ran 4.4
						Rec 5.0
						LOSS 0
						unacc 0
	28				9	TP 27.3
						TP 27.6
	29					Ti 28.0
						Pull #11
	30				29.9	START 2.04
						End 2.10
	31					Time 6
						Drl 6
	32				10	Ran 0.3
						Rec. 0.3
	33					LOSS 0
						unacc 0 Ti 28.3
	34				33.7	Pull #12
						START 2.26
	35				11	End 2.42
						Time 22
	36					Drl 22
						Ran 9.9.
	37				37.5	Rec 9.5
						LOSS 0.4
	38				12	unacc 0
						TP 37.8
	39					Ti 38.2
						Pull #33
	40				40.9	START 3.06
						End 3.17
	41				13	Time 11
						Drl 11
	42					Ran 9.8
						Rec 9.8
	43					LOSS - 0.4
						unacc 0

				ELEVATION TOP OF HOLE _496.6_		Hole No. _MC-7/1_	

PROJECT _Gallipolis Lock & Dam_   INSTALLATION _ORH-CD_   SHEET _3_ OF _3_ SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
					44.5	
	46					TP 45.9
450.0					14	
	47					
499.0			BOTTOM HOLE		47.6 TI	47.6
	48					
	49					
	50					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD		SHEET / OF SHEETS

1. PROJECT Gallipolis Lock' DAM

2. LOCATION (Coordinates or Station) MONO MC-2 STA 16+10.25 B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) MC-2/1

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 496.4

8. DEPTH DRILLED INTO ROCK 46.4

9. TOTAL DEPTH OF HOLE 450.0

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 13

15. ELEVATION GROUND WATER NA

16. DATE HOLE STARTED 4/28/89 COMPLETED 4/28/89

17. ELEVATION TOP OF HOLE 496.4

18. TOTAL CORE RECOVERY FOR BORING 46.4 %

19. SIGNATURE OF INSPECTOR ZMN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
496.4						PULL #1
	1		SANDSTONE			START 8:55
			P.m.g., m.gr, m.h, w/thin		Box 1	END 9:00
	2		sli, ang, carb lam.			TIME 5 min
			hA - near vert, 0, JT. 0.0-			DRL 5 min
	3		2.0 w/ LcA 0.0 -1.5'			RAN 5.0
			0.9 c.c. (mech)(0.0-0.4)		3.6	REC 4.6
	4					Loss 0.9
						UNACC —
	5				Box 2	DEPTH/DEP 5.0
						PULL #2
	6					START 7.08
489.8						END 9:16
488.9	7		CL m.gr, v.s w/poss 20.frac		7.5	TIME 8 min
						DRL 8 min
	8		ICL			RAN 5.0
			S.-m.h, R.br, slk v.bkn		Box 3	REC 5.0
	9		8.5-10.0:.9 segments			Loss —
	10		10.0- 11.4 grading sly			UNACC —
			us depth.			DEPTH/DEP 10.0
	11				11.0	PULL #3
485.0						START 9:50
	12		SLS			END 9:56
			chy. m.gr, s.-m.h. w			TIME 4 min
	13		closely spaced thin chy		Box 4	DRL 4 min
			seams 0.2 L.C. btwn 10.0			RAN 4.4
	14		& 14.4 grading into			REC 4.2
						Loss 0.2
481.9	15				14.7	UNACC 0.2
			SLS /SS			DEPTH/DEP 14.9
	16		Int-lird, s.-m.h. m.gr			PULL #4
			w/ occ shy hor. ptg.		Box 5	START 10:00
	17		grading into			END 10:08
						TIME 8 min
	18					DRL 8 min
					18.9	RAN 5.0 UNACC —
	19				Box 6	REC 5.0
477.0						Loss —
	20		SANDSTONE (con't)		con't	DEPTH/DEP 19.9
						PULL #5

DRILLING LOG (Cont Sheet) — ELEVATION TOP OF HOLE **4964** — Hole No. **MC-7/1**

PROJECT: GALLIPOLIS LOCK & DAM
INSTALLATION: ORH-CD
SHEET 2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20				Box 6	PULL #5 START 11:35 END 11:43
	21					
	22				21.7	TIME 8 min UNACC —
			SANDSTONE		Box 7	DRL 8 min RAN 4.9
	23					REC 4.9
	24		P.g., m.h., m.gr. w/			LOSS — DEP 29.9 T/DEP 29.3
	25		shy. lam & zoe, occ		25.4	PULL #6 START 11:50 END 12:00
	26		pts along shy lam			TIME 10 min
	27		O.1 L.C. btwn 29.3 &		Box 8	DRL 10 min RAN 3.5 REC 3.4
	28		27.8 (mech)			LOSS 0.1 T/DEP 27.8 UNACC 0.1
	29		0.3 LC btwn 32.3 &		28.8	DEP 29.3
	30		37.4 (mech)		Box 9	PULL #7 START 12:05 END 12:11
	31					TIME 6 min UNACC — DRL 6 min
	32				32.3	RAN 4.5 REC 4.5 T/DEP 32.3 LOSS — DEP 32.3
	33					PULL #8 START 12:17
	34				Box 10	END 12:25 TIME 8 min
	35				35.7	DRL 8 min RAN 5.1
	36					REC 4.6 LOSS 0.3
	37				Box 11	UNACC 0.3 DEP & T/DEP 37.4
	38					PULL #9 START 12:33 END 12:40
	39				39.4	TIME 7 min DRL 7 min
	40				Box 12	RAN 4.9 REC 4.9
	41					LOSS — UNACC —
	42				42.9	DEP 42.9 T/DEP 42.3
	43				Box 13	PULL #10 START 12:49 END 1:05
	44		(con't)		CONT	TIME 16 min

ENG FORM 1836-A
JUN 67   (ER 1110-1-1801)   GPO 1980 OF – 628-603

PROJECT: GALLIPOLIS LOCK & DAM   HOLE NO. MC-7/1

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 496.4			Hole No. MC-2/1	
PROJECT Gallipoli Lock & Dam			INSTALLATION ORH-CD			SHEET 3 OF 3 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	44		SANDSTONE (CONT)		BOX 13	DRL 16min PULL #10. RAN 4.4 REC 4.4 LOSS — UNACC —	
450.0	45						
	46		BOTTOM HOLE		46.4		
	47					T/DCP 46.7 DEP 47.2	
	48						
	49						
	50						

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MENO RC5 STA 15+15.05 B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) RC-5/1

5. NAME OF DRILLER DAVID HAEPER

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 493.5

8. DEPTH DRILLED INTO ROCK 47.8

9. TOTAL DEPTH OF HOLE 445.7

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 19

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 4/28/89 COMPLETED 4/29/89

17. ELEVATION TOP OF HOLE 493.5

18. TOTAL CORE RECOVERY FOR BORING 47.8 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
493.5			SANDSTONE			Pull #1
	1				Box 1	START 1:20
			F-m.g, m.gr, m.h w/thin			END 1:28
	2		shi ang. carb. lam			Time 8 min
			0.2 acc. loss (mech. prob			Drl 8 min
	3		at T/H) btwn 0.0 & 5.0			Ran 5.0
					3.6	Rec 4.8
	4					Loss .2
						Unacc .2
	5				Box 2	Dep + T/Dep 5.0
						Pull #2
	6					START 1:32
486.8						END 1:48
	7		CLS S.-m.h, gr, wea. cont @ 6.7 vs 7.2-7.6		7.2	Time 11 min
485.9						Drl 11 min Unacc —
	8		ICL			Ran 4.5
			S.-m.h, r.br, bkn, slk		Box 3	Rec 4.5
	9					Loss —
						Dep + T/Dep 9.5
	10				10.3	Pull #3
						START 2:55
	11					END 3:07
481.6					Box 4	Time 12 min
	12		SLS			Drl 12 min
	13		gr., s.-m.h. w/occ. f.sa.			Ran 3.6
						Rec 3.3 T/Dep 13.1
	14		Lenses, vf bkn 13.1-14.3			Loss 0.3
					14.3	Unacc 0.3
	15		(mech) weathered w/			Dep 14.5
			tr. cl fld @ 16.0,			Pull #4
	16		grading into		Box 5	START 9:00
476.9						END 9:10
	17		SANDSTONE			Time 10 min
			shy. f.g., m.h., gr w/incl.			Drl 10 min
	18				18.0	Ran 4.9
			Hde, mic ptgs. v.shy 19.0-		Box 6	Rec 4.9 T/Dep 18.0
	19		20.0 (0.3 cl) btwn 18.0'			Loss 0
	20				cont	Unacc 0 Dep 17.6
						Pull #5 START 9:18 END 9:32 (cont)

					SHEET 2
PROJECT Gallipolis Lock; Dam			INSTALLATION ORH-CD		OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		+ 20.4 (mech) grading into		Box 6	Pull #5 T/DEP 20.4
472.5	21					Time 11 min
						DRL 11 min
			SLS		21.5	RAN 2.4
	22		SS., m. gr., m. h., w/occ		Box 7	REC 2.1
						LOSS 0.3
	23		SS. LENSES, 0.3 LC btwn			UNACC 0.3 DEP 23.0
						Pull #6
	24		24.2 ; 28.4, grading into			START 9:35
						END 9:43
						TIME 8 min T/DEP 24.2
					25.0	DRL 8 min LOSS 0.4
	25					RAN 4.2 UNACC 0.4
						REC 3.8 DEP 25.4
	26				Box 8	Pull #7
						START 9:49
						END 10:00
	27					TIME 11 min
						DRL 11 min UNACC 0.3
	28					RAN 4.7
					28.4	REC 4.4
464.5	29					LOSS 0.3 T/DEP 28.9
			SANDSTONE			DEP 29.2
	30				Box 9	Pull #8
			f-m.g, m.-gr, m.h.-h,.			START 10:05
	31					END 10:10
			MASS w/occ, sm, pyrite			TIME 15 min
	32					DRL 15 min
			INCLUSIONS to 33.0		32.0	RAN 4.5
						REC 4.5
	33		0.2 LC (mech) btwn			LOSS —
					Box 10	UNACC — T/DEP 33.4
	34		38.2 ; 43.8			DEP 33.9
						Pull #9
	35					START 10:15
					35.5	END 10:23
	36					TIME 8 min
						DRL 8 min
	37					RAN 4.6
					Box 11	REC 4.8
	38					LOSS —
						UNACC —
	39					DEP+T/DEP 38.2
					39.0	Pull #10
	40					START 10:30
						END 10:35
	41				Box 12	TIME 5 min
						DRL 5 min UNACC 0.2
	42					RAN 4.6
						REC 4.4
	43				42.5	LOSS 0.2
					Box 13	DEP+T/DEP 42.8
						Pull #11
	44		(cont)		(cont)	START 10:43 (cont)

ELEVATION TOP OF HOLE							Hole No. RC-511

DRILLING LOG (Cont Sheet) — ELEVATION TOP OF HOLE 493.5 — Hole No. RC-511

PROJECT	INSTALLATION	SHEET 3
Gallipolis Lock & Dam	ORH-CD	OF 3 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV-ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	44		SANDSTONE.		Box 13	Pull All
	45					END 10:56
						TIME 13 min
						DRL 13 min
	46				46.1	RAN —
					Box 19	REC 5.0
	47					LOSS —
						UNACC —
445.7			Bottom Hole		47.8	DEPT/DEP 47.8
	48					
	49					
	50					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4 x 5½
2. LOCATION (Coordinates or Station) STA- 13 + 28.37	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W G Jaques	12. MANUFACTURER'S DESIGNATION OF DRILL B. 57 Mobile
4. HOLE NO. (As shown on drawing title and file number) 496.1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED NA — UNDISTURBED NA
5. NAME OF DRILLER David Harper	14. TOTAL NUMBER CORE BOXES 12
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER NA
	16. DATE HOLE — STARTED 12-6-88 — COMPLETED 12/6/88
7. THICKNESS OF OVERBURDEN 496.1	17. ELEVATION TOP OF HOLE 496.1
8. DEPTH DRILLED INTO ROCK 43	18. TOTAL CORE RECOVERY FOR BORING 43 %
9. TOTAL DEPTH OF HOLE 43	19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.1	1		SS. gr. to lt gr. mod hd. med to f. g. sli' mic. mec. bkn. @ 491.5		1	Pull # START 12.27 End 12.55 Time 28. Drl 28 Ran 5.0 Rec 5.0 Loss 0 Unacc 0
	2					
	3					
	4					
					4.8	Ti & TP 5.0
490.9	5					Pull #2 START 1.10 Loss 0 End 1.17 unacc 0 Time 7 Drl 7 TP 5.8 Ran 0.8 Rec 0.8 Ti. 6.7
	6		ICL. r. bn. s mot w/gn & gn. gr. cl. Mar. being cls bkn. 488.9 – 488.6 Sev. w/ poss loss lt. gr. fat cl @ 490.9 – 490.7 mech bkn. 490.3 – 489.9		2	
	7				7.2	Pull # 3 START 1.30 unacc 0.3 End 1.40 Time 10 Drl 10 Ran 3.1 Rec 2.8 Loss 0.3 TP 8.9
488.6	8				3	
	9		SLS. g. to. gn. gr. s. to. mod. hd. grad. w/sh @ top to sh. @ bot. mech. spin 487.7 bkn. w/cl seams 487.2 485.8			Ti. 9.3
	10				10.2	Pull #4 START 2.03 Loss 0.3 End 2.18 unacc 0.3 Time 15 Drl 15 TP 10.5 Ran 1.6 Rec 1.3 Ti. 10.9
	11					Pull #5 START 2.39 End 2.50 Time 11 Drl 11 Ran 3.2 Rec 3.1 TP 13.7 Loss 0.1 unacc 0.1
	12				4	
	13					
	14				14.5	
	15					Ti. 15.7
	16				5	Pull # 6 START 3.18 End 3.29 Time 11 Drl 11 Ran 7.3 Rec 7.5 Loss 0 unacc 0
	17				17.5	
478.6	18				6	
	19		Cont. Next Page			

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DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE	Hole No. RC 14/1
496.1	

PROJECT	INSTALLATION	SHEET 2
Gallipolis Lock & Dam	ORH-CD	OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21		SS gr. to lt gr. med hd. f. to med. g. mic. grad. Contact. w/ SLS. c. w/ dep. occ x-bdd.	20.4	7	TP 21.4 / TI 21.0 / Pull #7 / START 8.25 / End 8.54 / Time 29 / Drl 29 / Ran 3.5 / Rec 3.1 / Loss 0.4 / unacc 0.4
	22		redrill 471.4. To 470.6			
	23		Nod @ 466.2			
	24		Small vu. @ 461.5			TP 24.7
	25		ang. pl. 30° @ 476.0 475.9	25.2		TI 25.5 / Pull 8
	26				8	START 9.20 / End 9.48 / Time 28 / Drl 28 / Ran 7.8 / Rec 8.2 / Loss 0 / unacc 0
	27					
	28					
	29			29.1	9	
	30					
	31					
	32			32.2		TP 32.5 / TI 32.9 / Pull 9
	33				10	START 10.26 / End 10.54 / Time 34 / Drl 28 / Ran 9.9 / Rec 9.9 / Loss 0 / unacc 0
	34					
	35					
	36			36.3		
	37				11	
	38					
	39					
466.0	40			40.2		
	41				12	
	42					TP 42.5
453.1	43		Bottom hole	43.0		TI 43.0

DRILLING LOG

DIVISION	ORD	
INSTALLATION	ORH CD	

1. PROJECT Gallipolis Lock & Dam2

2. LOCATION (Coordinates or Station) STA. 2+83.2 "A"

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) RC-26/1

5. NAME OF DRILLER David Harper

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 497.8

8. DEPTH DRILLED INTO ROCK 22.8

9. TOTAL DEPTH OF HOLE 22.8

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED NA UNDISTURBED NA

14. TOTAL NUMBER CORE BOXES 7

15. ELEVATION GROUND WATER NA

16. DATE HOLE STARTED 2-24-89 COMPLETED

17. ELEVATION TOP OF HOLE 497.8

18. TOTAL CORE RECOVERY FOR BORING 22.8 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
496.3	1		SS lt gr. med hd. med c 9· thin bdd 0.1 spacing fe. stain 0.0-0.9			Pull #1 START 9:20 End 9.33 Time 13 Drl 13
	2		SLS/CLS/SS. Interbedded SLS gr. s to mod hd., Sh. 1.5 2.1, 3.4-5.1, 6.0-6.7		1	Ran 4.8 Rec 4.8 LOSS unacc 0.2
	3		CLS gr. s. sh. 2.9.-3.4. 5.0. 6.0		3.8	
	4		SS gr. mod. hd. v.f. gr. 2.1-2.9 fe.sta. 1.5-1.8			
	5		Sr SLS. 3.7. 5.1. 6.0.-6.7 bkn. 3.8.-5.0		2	TI & TP 5.00 Pull #2 START 9:40 End 9.55 Time 15 Drl 15
	6					Ran 4.2 Rec 4.6
491.1	7		SS. lt gr. mod. hd. f gr., bkn. pl. ~0.3. spacing. ang. 45° pl. w/cl coating 7.0-7.2.		7.3	LOSS unacc 0.4
	8				3	
488.7	9		SLS gr. s. to med hd. sh. occ. intbdd. w CLS SS CLS. gr. s. sh. 9.1-10.3 10.8,-11.2. bkn 10.9.-11.2 14.1 14.5 SS. scam. gr. med. hd. f.g. 11.7-11.9 15.5-16.6 17.6-17.7 intbdd SLS & CLS w/bkn pl. 0.1 spacing w/occ cl coating 12.4-15.0 20.0 21.6 5, SLS, 15.3-15.5 17.7.-18.3 cl, SLS 22.2.-22.8			TI & TP 10.0 Pull #3 START 10.04 End 10:17 Time 13 Drl 13
	10				11.2	
	11					Ran 4.1 Rec 4.3 LOSS - unacc 0.2
	12				4	
	13					
	14				14.9	TP 14.5 TI 15.0 Pull #4 START 10.22 End 10.33 Time 11 Drl 11
	15					
	16				5	Ran 4.4 Rec 4.4 LOSS 0 unacc 0
	17					
	18				18.6	TP 18.9
	19				6	TI 19.5

PROJECT Gallipolis Lock & Dam

HOLE NO. RC 26/1

						ELEVATION TOP OF HOLE	Hole No.	RC 26/1	

PROJECT	INSTALLATION	SHEET 2
Gallipolis Lock & Dam	ORH-CD	OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
474.6	21				6	Pull #5
						START 10:42
						End 10:55
						Time 13
	22				22.2	Dri 13
						Ran 5.0
						Rec 5.0
						Loss 0
474.6	23				4	unacc 0
			CLS dk gr S Cl			
423.9	24				23.9	TP 23.9
						TI 24.5
	25					
	26					
	27					
	28					
	29					
	30					

ENG FORM 1836-A (ER 1110-1-1801)	GPO 1980 OF - 628-603	PROJECT Gallipolis Lock & Dam	HOLE NO. RC 26/1

1. PROJECT 6 Allipolis Lock + Dam	10. SIZE AND TYPE OF BIT 4X5½
2. LOCATION (Coordinates or Station) MONO R-19 STA 18+21B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W.G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) R-19/1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN / DISTURBED N/A / UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRY	14. TOTAL NUMBER CORE BOXES 6
	15. ELEVATION GROUND WATER N/A
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	16. DATE HOLE STARTED 2/10/89 / COMPLETED 2/13/89
7. THICKNESS OF OVERBURDEN 0 496.4	17. ELEVATION TOP OF HOLE 496.4
8. DEPTH DRILLED INTO ROCK 22.5	18. TOTAL CORE RECOVERY FOR BORING 27.5 %
9. TOTAL DEPTH OF HOLE 493.9	19. SIGNATURE OF INSPECTOR ZMD.

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.4			SANDSTONE			PULL #1
	1					START 22:00
			LT.GR. M.H.-H, M.-C.GR.			END 22:15
	2				1	TIME 15min
			few BKN DN, CAL.			DRL 15min
	3					RAN 5.0
			CEM. 0.0-0.2, 0.7-1.0			REC 5.0
	4				3.9	LOSS 0
			CLAY coating @ 7.0			UNACC 0
	5					DEP+TIDEP 5.0
					2	PULL #2
	6					START 22:21
						END 22:29
489.4	7					TIME 8min
			SLS		7.4	DRL 8min
	8		GR. M.H, SA			RAN 4.7
487.7						REC 4.7
	9		CLS		3	LOSS 0
486.7			GR.S. Sh SO, SLS 9.3-9.4			UNACC 0
						DEP+TIDEP 9.7
	10					PULL #3
	11		SANDSTONE		11.0	START 22:38
						END 22:54
	12		GR., M.H, F-UZ.F GR			TIME 16. min
					4	DRL 16min
	13		SLT, SA, SLS SLIGHT			RAN 5.1
						REC 5.1
	14		BKN 12.4-13.2, 16.9			LOSS 0
			-17.5, 20.5-21.1,		14.7	UNACC 0
	15					DEP+TIDEP 14.8
			MECH BKN 14.6-14.5			PULL #4
	16				5	START 23:08
			Sh			END 23:22
	17					TIME 14min
						DRL 14min
	18					RAN 4.1 LOSS 0
					18.—	REC 4.1 UNACC 0
	19					DEP+TIDEP 18.9
						PULL #5
	20		(CONT)			(CONT)

ELEVATION TOP OF HOLE			4964		Hole No. R-19/1	

PROJECT			INSTALLATION		SHEET 2	
GALLIPOLIS Lock+Dam			ORH-LD		OF 2 SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #5
						START 16:20 REC 3.6
	21					END 16:29 LOSS 0
						TIME 4min UNRL 0
						DRL 4min
	22					RAN 3.6
473.9			BOTTOM HOLE.		22.5	DEPTH/IDEP 22.5
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67	(ER 1110-1-1801)	GPO 1990 OF-628-603	PROJECT GALLIPOLIS Lock+Dam	HOLE NO. R-19/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

10. SIZE AND TYPE OF BIT 7 X 5½"

2. LOCATION (Coordinates or Station) MONO R-19 STA 17+88 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B.57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-19/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

5. NAME OF DRILLER Dennis Thompson

14. TOTAL NUMBER CORE BOXES 6

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/13/89 COMPLETED 2/13/89

7. THICKNESS OF OVERBURDEN Ø 496.1

17. ELEVATION TOP OF HOLE 496.1

8. DEPTH DRILLED INTO ROCK 21.6

18. TOTAL CORE RECOVERY FOR BORING 21.6 %

9. TOTAL DEPTH OF HOLE 474.5

19. SIGNATURE OF INSPECTOR ZMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.1			SLS			PULL #1
	1		DK.gR., S-M.H., sa, BKn			START 17:10
			sHAly 0.0-0.3, 1.1-2.3			END 17:20
					1	TIME 10min
493.8	2					DRL 10 min
						RAN .50
	3		SANDSTONE			REC 5.0
			gR.-LT.gR, M.H.-H, m-			LOSS Ø
	4				3.8	UNACC Ø
			C.gR, CAL.CEM. 3.4-3.8			
	5					DEPTH/DRP 5.0
					2	PULL #2
490.0	6		CLS			START 18:10
489.4			gR. S.			END 18:20
	7		SLS		7.3	TIME 10min
			gR - DK.gR, S-M.H, sa,			DRL 10min
	8				3	RAN 5.0
			SS. gR., M.H., UEFgR.			REC 4.8
486.9	9		CAL.CEM. 6.7-7.6			LOSS 0.2
			CLS			UNACC 0.2
	10		DK.gR, S. sH., cl. scam			DEPTH/DRP 10.0
			.05 Thick @ 10.6			
485.5					14.0	PULL #3
	11		SANDSTONE			START 18:30
						END 18:40
	12		gR., M.H., f.gR			TIME 10min
					4	DRL 10min
	13		SLS seams 12.3-12.7			RAN 5.0
						REC 4.9
	14		.05 Thick 12.9, 13.2-13.3			LOSS 0.1
					14.8	UNACC 0.1
	15		.05 Thick 15.5			DEPTH/DRP 15.0
						PULL #4
	16		sa. 19.7-20.5, 20.9-21.6		5	START 18:50
						END 19:00
	17		SLT below 19.1			TIME 10min
						DRL 10min
	18					RAN 4.3
					18.9	REC 4.3 UNACC Ø
	19				6 (cont)	LOSS Ø DEPTH/DRP 19.3
	20					PULL #5 CONT

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Lock+Dam   HOLE NO. R-19/2

PROJECT GALLipolis Lock + DAm	INSTALLATION ORH-CD		SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL AS
	21					START 19:15
9795			BOTTOM HOLE		21.6	END 19:25 DCP + TI / DCP 21.6
	22					TIME 10 min
	23					DRL 10 min
	24					RAN 2.3
	25					REC 2.3
	26					LOSS Ø
	27					UNACC Ø
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A   (ER 1110-1-1801)   GPO 1980 OF - 620 - 603
JUN 67

| PROJECT GALLipolis Lock + DAm | HOLE NO. R-19/2 |

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4 7/8
2. LOCATION (Coordinates or Station) MONO L-20 STA 17+78 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) L-20/1	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN N/A — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRY	14. TOTAL NUMBER CORE BOXES 6
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE — STARTED 2/13/89 — COMPLETED 2/13/89
7. THICKNESS OF OVERBURDEN Ø 496.5	17. ELEVATION TOP OF HOLE 496.5
8. DEPTH DRILLED INTO ROCK 22.9	18. TOTAL CORE RECOVERY FOR BORING 22.9 %
9. TOTAL DEPTH OF HOLE 474.1	19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5			SANDSTONE			Pull #1
	1		dk. gr., m.H, f. gr., occ			START 16:55
			slt bkn pn. ol spacing		1	END 17:12
	2					TIME 17 min
						DRL 17 min
493.5	3					RAN 4.7
492.8			CLS gr.s. scually bkn 3.2-3.6		3.6	REC 4.7
	4		SANDSTONE			LOSS Ø UNACC Ø
			lt. gr., m.H.-HH m-c gr.			DEPTH/DEP 4.5
	5		cal cem. 3.7-4.7 bkn pn			Pull #2
	6		.3 spacing few occ.		2	START 17:18
			CLS frag + stringers			END 17:26
	7		throughout			TIME 8 min
488.7					7.2	DRL 8 min
488.2	8		CLS gr.s. sh.			RAN 5.2 REC 4.9
			SLS			LOSS 0.2
	9		gr-dk.gr, m.H, sq		3	UNACC 0.2
	10		cl seam 9.9-10.0 bkn 10.3-10.7			DEPTH/DEP 9.9
485.8						Pull #3
	11		SANDSTONE		10.9	START 17:37
	12		gr m.H. f. gr, occ slt			END 18:06
						TIME 29 min
	13		col, cem., 11.0-11.8, 14.0-		4	DRL 29 min RAN 4.6
	14		15.2, silty w/bkn pn .8			REC 4.6
			15.2 -15.9, 12.9 -13.9		14.9	LOSS Ø UNACC Ø
	15					DEPTH/DEP 14.5
	16		pn w/cl coating @ 13.9		5	Pull #4 START 18:14 END 18:22
	17		bkn 15.5-15.7, 18.1-18.2			TIME 8 min DRL 8 min
	18		slt gr, s., sl,		17.9	RAN 5.1 REC 5.1
	19				6 (cont)	LOSS Ø UNACC Ø DEPTH/DEP 19.6
	20		(CONT)			Pull #5

PROJECT Gallipolis Lock & Dam	INSTALLATION OEH-CD	SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					Pull #5
476.5	21		SLS GR. M. H. Sa		6	START 18.36
	22					END 18.45
			BOTTOM HOLE		22A	TIME 9min Dep t 7/x P22.4
474.1	23					DRL 9min
	24					RAN 2.8
	25					REC 2.8
	26					LOSS Ø
	27					UNACC Ø
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

1. PROJECT Gallipolis Lock + Dam	**10. SIZE AND TYPE OF BIT** 4ч5½
2. LOCATION (Coordinates or Station) Mono R-20 STA 17+49 B	**11. DATUM FOR ELEVATION SHOWN (TBM or MSL)** M.S.L
3. DRILLING AGENCY W.G. JAQUES	**12. MANUFACTURER'S DESIGNATION OF DRILL** B.-57 MOBILE
4. HOLE NO. (As shown on drawing title and file number) R-20/2	**13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN** — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER Dennis Thompson	**14. TOTAL NUMBER CORE BOXES** 7
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	**15. ELEVATION GROUND WATER** N/A
	16. DATE HOLE STARTED 2/13/89 COMPLETED 2/13/89
7. THICKNESS OF OVERBURDEN Ø 496.2	**17. ELEVATION TOP OF HOLE** 496.2
8. DEPTH DRILLED INTO ROCK 22.1	**18. TOTAL CORE RECOVERY FOR BORING** 22.1
9. TOTAL DEPTH OF HOLE 479.1	**19. SIGNATURE OF INSPECTOR** ZMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.2			SANDSTONE/SLS			PULL #1
	1		gr, m.H., F-VFF gr, SLT,			START 20:30
			0.4-0.8, 1.4-2.2, SLS gr, m#			END 20:40
	2		Sa 0.0-0.4-0.8-1.4, 2.2-2.8		1	TIME 10 min
			Num Ang20°, 30° bd, 02 spacing			DRL 10 min
493.4	3		Bkn Throughout			RAN 4.7
			SANDSTONE		3.8	REC 4.7
	4		gr-LT.gr., m.H., F.gr			LOSS Ø
			SLS gr. m.h. S. 4.5-5.0			UNACC Ø DCP 4.7
	5		FATTly cl. seam 5.6-5.8		2	PULL #2
			gr. m. gr below 6.1+cal			START 20:55
	6		cem @ 6.3-6.5			END 21:05
489.4						TIME 10 min
	7		SLS		7.9	DRL 10 min
	8		gr-gn.gr. S-m.H, say Fatlly			RAN 5.1
			cl. seam (gr) 6.8-6.9		3	REC 5.1
	9		gr. sh. below 9.8			LOSS Ø
			CLS gr-gn.gr, S. sh bkn 6.9			UNACC Ø
486.2	10		7A Bkn 9.3-9.8		10.0	DCP 9.8
			SANDSTONE			PULL #3
	11		LT.gr., m.H., F.gr.,			START 21:37
						END 21:47
	12		Sh Seam 12.0-12.2		4	TIME 10 min
						DRL 10 min
	13		13.4-13.5, 15.9-16.0			RAN 4.8
					13.7	REC 4.8
	14		SLT below 20.6			LOSS Ø
						UNACC Ø DCP 14.6
	15				5	PULL #4
						START 22:00
	16					END 22:10
						TIME 10 min
	17				17.3	DRL 10 min
						RAN 4.8
	18				6	REC 4.8
						LOSS Ø
	19				(cont)	UNACC Ø
						DCP 19.5
	20		(CONT)			PULL #5 (CONT)

						SHEET 2 OF 2 SHEETS

PROJECT GALLIPOLIS Lock+DAm   **INSTALLATION** ORH-LD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #5
	21				21.0	START 22:20
					7	END 22:30
979.1	22		BOTTOM HOLE		22.1	TIME 10 min
						DRL 10 min DEP 22.1
	23					RAN 2.6
	24					REC 2.6
	25					LOSS Ø
	26					UNACC Ø
	27					
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A   (ER 1110-1-1801)   GPO 1980 OF-628-603   **PROJECT** GALLIPOLIS Lock+DAm   **HOLE NO.** R-20/2
JAN 67

DRILLING LOG	DIVISION OED	INSTALLATION ORH-CP	SHEET 1 OF 1 SHEETS

1. PROJECT Gallipolis Lock + Dam	**10. SIZE AND TYPE OF BIT** 4 X 5½ "
2. LOCATION (Coordinates or Station) MONO R-21 STA 17+29 B	**11. DATUM FOR ELEVATION SHOWN (TBM or MSL)** M.S.L.
3. DRILLING AGENCY W. G. JAQUES	**12. MANUFACTURER'S DESIGNATION OF DRILL** B.-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) R-21/1	**13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN** DISTURBED N/A UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRY	**14. TOTAL NUMBER CORE BOXES** 6
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	**15. ELEVATION GROUND WATER** N/A
	16. DATE HOLE STARTED 2/13/89 COMPLETED 2/13/89
7. THICKNESS OF OVERBURDEN Ø 496.2	**17. ELEVATION TOP OF HOLE** 496.2
8. DEPTH DRILLED INTO ROCK 22.4	**18. TOTAL CORE RECOVERY FOR BORING** 22.4 %
9. TOTAL DEPTH OF HOLE 473.8	**19. SIGNATURE OF INSPECTOR** JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.2	1 2		SANDSTONE M.h., f.g., gr bk, 10 Frac @ 2.3		Box 1	Pull #1 START 19:18 END 20:05 TIME 47 min DRL 47 min RAN —
493.7	3 4 5		ICL S. PLASTIC, gr, CL, @ 5.2 0.4 SS, 5.6, 0.1, S., ch @ 6.0 Sa, SLS, 6.0 To 9.6 2.0 LOSS @ 4.8-9.6, 0.6, S. CLS @ 9.6		3.9 Box 2	REC 4.8 LOSS Ø UNACC Ø T/DEP 4.8 Pull #2 START 20:30 END 20:45 TIME 15 min
	6 7 8 9				7.3 Box 3	DRL 15 min RAN — REC 2.8 LOSS 2.0 UNACC 2.0 T/DEP 9.6
486.0	10 11 12 13 14 15 16 17 18		SANDSTONE M.H. f.g. gr. MASS 0.1, gch, @ 10.9 0.3 cLS 13.2 0.4 LOSS 9.6-14.4 grad FINER grain + s/w/Dep 0.1 CLS @ 17.0 grading To cL/SLS ≈ 19.0		12.8 Box 4 16.7 Box 5	Pull #3 START 20:55 END 21:06 TIME 11 min DRL 11 min RAN — REC 4.4 LOSS 0.4 UNACC 0.9 T/DEP 14.4 Pull #4 START 21:30 END 21:45 TIME 15 min DRL 15 min RAN — REC 5.0 LOSS Ø UNACC Ø DEP 19.4
	19 20		(Cont)		20.0	Pull #5 (cont)

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 496.2					Hole No. R-21/1	
PROJECT GALLipolis Lock ¦ Dam	INSTALLATION ORH-CD					SHEET 2 OF 2 SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANdstone			PuLL #5
	21				Box 5	START 21:55 REC 29 END 22:04 LOSS Ø TiME 9min 6NAcc Ø DRL 9min RAN —
473.8	22		CLS		224	TiDEP 22.3
	23					
	24					
	25					
	26					

ENG FORM 1836-A JUN 67	(ER 1110-1-1801)	GPO 1980 OF - 828-603	PROJECT GALLipolis Lock ¦ Dam	HOLE NO. R-21/1

DRILLING LOG	DIVISION ORD	INSTALLATION OEH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM	10. SIZE AND TYPE OF BIT 4 X 5 ½"
2. LOCATION (Coordinates or Station) MONO R-21 STA 17+19 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) R-21/2	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER DAVE HARPER	14. TOTAL NUMBER CORE BOXES 6
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE STARTED 2/20/89 COMPLETED 2/20/89
7. THICKNESS OF OVERBURDEN Ø 496.6	17. ELEVATION TOP OF HOLE 496.6
8. DEPTH DRILLED INTO ROCK 21.7	18. TOTAL CORE RECOVERY FOR BORING 21.7 %
9. TOTAL DEPTH OF HOLE 479.9	19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6			SLS GR. M.H, Sa BKN .02 spacing			Pull #1
495.5	1		scueply BKN 0.0 - 0.2			START 10:52
			SANDSTONE			END 11:07
494.5	2		SR.-LT.GR., M.H. F.GR		1	TIME 15 min
			SLS			DRL 15 min
	3		GR., M.H., Sa, DN, ANG 45°			RAN 4.8
493.4			2.8 - 3.1		3.8	REC 4.5
	4		CLS			LOSS 0.3
			DKGR. S. scueply BKN 3.4-4.8			UNACC 0.3
			w/ 0.3 LC			T/DTP 4.8
	5				2	
491.2						DEP 5.6
	6		SANDSTONE			Pull #2
			LTGR, MH-HH, M-FGR, 6Kn DN			START 11:17
	7		.4spain, caLcem, 5.7-61-6.5-7.1		7.6	END 11:39
489.5			CLS			TIME 12 min
488.5	8		GR. S. Sh.			DRL 12 min UNACC Ø
			SLS		3	RAN 4.7
	9		GR, S - M.H. Sh, SS. GR, M.H.			REC 4.7
			F.- V.E.F., SLT 8.1-8.9, scuely			LOSS Ø T/DTP 9.5
486.4	10		BKN 9.2-9.5			DEP 9.8
	11		SANDSTONE		11.1	Pull #3 START 11:40
						END 11:52
	12		GR - LTGR, M.H. F.GR, bKN			TIME 12 min
						DRL 12 min
	13		DN. 0.7 SPKing, scuely		4	RAN 4.9
						REC 4.9
	14		bKN 12.3 - 12.5 w/LC .1			LOSS Ø
						UNACC Ø T/DTP 14.8
	15		SLT 12.3 - 19.0		14.5	DEP 14.9
	16				5	Pull #4 START 12:40 END 12:53
	17					TIME 13 min DRL 13 min
						RAN —
	18				18.0	REC 3.7 T/DTP 17.8
					6	LOSS 0.1
477.6	19				(CONT)	UNACC 0.1 DEP 18.8
			SLS			Pull #5 START 1:05
	20		(CONT)			END 1:13

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT GALLIPOLIS LOCK + DAM	HOLE NO. R-21/2

| PROJECT Gallipolis Lock + Dam | INSTALLATION ORH-CD | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS.		6	Pulls
	21		gR.; S-mH., Sd, clayey Fr.0-Fa			Time 88min
						DRL 8min Loss 0
474.9			Sd below 20.1		21.7	RAH — unAcc 0
	22		Bottom Hole			REC 3.9 DePt 1.7
	23					
	24					
	25					
	26					
	27					
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

10. SIZE AND TYPE OF BIT 4 X5½

2. LOCATION (Coordinates or Station) MONO R-27 STA 16+90B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-2211

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER STEVE FRY

14. TOTAL NUMBER CORE BOXES 6

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 2/13/89 COMPLETED 2/20/89

7. THICKNESS OF OVERBURDEN Ø 496.5

17. ELEVATION TOP OF HOLE 496.5

8. DEPTH DRILLED INTO ROCK 22.1

18. TOTAL CORE RECOVERY FOR BORING 22.1 %

9. TOTAL DEPTH OF HOLE 474.4

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
496.5			SANDSTONE			PULL #1
	1					START 22:35
			gR-LT.gR. M.H.-HH., F-mgR.			END 22:42
	2				1	TIME 7min
			occ. CAL, cem. BKN DW 1.0			DRL 7min
	3					RAN 4.4
			SPACING, BKN DW 0.3			REC 4.3
	4				3.8	LOSS Ø.1
			SPACING ABOVE 1.3, CAL, cem,			UNACC Ø.1 DCP 4.4
	5					PULL #2
			1.2-1.6 severely BKN		2	START 22.53
490.8	6		5.0-5.1			END 23.03
	7		CLS			TIME 10min
			BR-gR, S, ANG DW, 30°6.8-6.9		7.4	DRL 10min
488.7			SC BELOW 7.4			RAN 9.6
	8		SANDSTONE			REC 9.1
	9				3	LOSS Ø
			gRAY, m-H, F.gR			UNACC Ø DCP 9.0
	10					PULL #3
			Few bKs, VE.FgR (SLT)		11.0	START 23.12
	11					END 23.24
			7.8-9.7, 13.7-15.5			TIME 12min
	12					DRL 12min
			SLS gR. m.H. SC 17.3		4	RAN 5.1
	13					REC 5.1
			18.4			LOSS Ø
	14					UNACC Ø
					14.6	DCP 14.1
	15					PULL #4
	16					START 7.40
					5	END 8.02
	17					TIME 22min
						DRL 22min
	18				18.3	RAN 3.7
					6 (CONT)	REC 3.5 DCP 17.8
	19					LOSS 1.2
477.1						UNACC 0.2
	20		SLS (CONT)			PULL #5 (CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT GALLIPOLIS LOCK+DAM HOLE NO. R-2211

PROJECT GALLiPOLiS LoCK + DAM			INSTALLATION O RH-CD				SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOV.	BOX OR SAMPLE NO.	REMARKS
	20		SLS		6	Pull #5
			GR., m.H., Sa, HiġHAng			START 8:20
	21		FRAC A.5- A.9			END 8:35
479.7					22.1	Time 15min DCP22.1
	22		SANDSTONE			DRL 15min
479.5			GR. m.H. F.GR			RAR 4.3
	23		BoTTom HoLE			REC 4.3
	24					LOSS 0
	25					6 NARG.R
	26					
	27					
	28					
	29					
	30					
	31					
	32					
	33					
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

1. PROJECT GALLIPOLIS LOCKS & DAM	**10. SIZE AND TYPE OF BIT** 4"x5½"
2. LOCATION (Coordinates or Station) Mono. R-22	**11. DATUM FOR ELEVATION SHOWN (TBM or MSL)** M.S.L.
3. DRILLING AGENCY W. G. JAQUES Co.	**12. MANUFACTURER'S DESIGNATION OF DRILL** MOBILE B-53
4. HOLE NO. (As shown on drawing title and file number) R-22/2	**13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN** DISTURBED N/A / UNDISTURBED N/A
5. NAME OF DRILLER FRANK BAKER	**14. TOTAL NUMBER CORE BOXES** 6
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	**15. ELEVATION GROUND WATER**
7. THICKNESS OF OVERBURDEN 0.0	**16. DATE HOLE** STARTED 11-15-88 / COMPLETED 11-15-88
8. DEPTH DRILLED INTO ROCK 22.0	**17. ELEVATION TOP OF HOLE** 496.4
9. TOTAL DEPTH OF HOLE 22.0	**18. TOTAL CORE RECOVERY FOR BORING** 100 %
	19. SIGNATURE OF INSPECTOR David Morgan

ELEVATION 496.4 (a)	DEPTH 0.0 (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
			SANDSTONE - sly., m.g., m.h., m. gr. ¼occ. sli. ang., dk. mic. bdd. plns.		BOX	11-15-88 USING 4 X 5½ double Tube core bbl.
	1					PULL-1 START 0818 END 0830
						tent. Found TIME 12 min. El.495± DRL 12 min.
	2				1.	RAN 3.1 REC. 3.1
			bkn. (mech.)			LOSS 0.0
			bkn. (mech.)			UNACC. 0.0
	3					DEP. & T. DEP.
					3.7	PULL-2 START - 0902 END - 0920
	4					TIME - 18 min. DRL - 18 min. RAN - 3.7
	5				2.	REC. - 3.7 LOSS - 0.0 UNACC. - 0.0
	6		bkn. (mech.)			T. DEP 6.3 (soft.)
	7					DEP. 6.8 PULL-3
489.0	7.4		tight contact		7.4	START - 1023 END - 1055
488.5	7.9		CLAY, s., gr., fat			TIME - 32 min DRL - 27 min
	8		grading INDURATED CLAY- s., r. & gr., slk.			RAN - 4.4 REC. - 3.7
			bkn., frac. 488.0 -479.6		3.	LOSS - 0.7 UNACC. - 0.0
	9					
486.9	9.5		grad contact			
			SILTSTONE, shy., gr., s.-m.h.			
486.4	10		grading sandy			

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE	496.4		Hole No.	R-22/2
PROJECT GALLIPOLIS Locks & Dam		INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS

ELEVATION 486.4 a	DEPTH 10.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SANDSTONE - sly., f.g., gr., m.h.		BOX 3 cont.	— T. DEP. 10.1 (Pull-off) Pull-3 (Cont.)
	11		bkn. (mech.) 485.9-485.2		11.0	DEP. 11.1
			bkn. (mech.) 484.8			PULL-4 START-1140 END-1157 Time-17 min. Drl.-17 min
	12		o., hor., sli. coa. ptg. @ 484.2		4.	RAN. 3.4 REC. 4.1 Gain. 0.7 Unacc. 0.0
	13		Sand content increasing w/depth			
482.1	14 14.3		grading		14.6	T. DEP. & DEP. 14.6
			SANDSTONE, sly., m.g., m.h.-h., m.gr w/ occ., sli. ang., shy ptg.			
	15					PULL-5 START-1300 End.-1314 Time-14 min. Drl.-14 min
	16				5.	RAN.-4.1 REC.-4.0 Less-0.1 Unacc.-0.0
	17					
	18		cl. coa., ang. ptg. @ 478.4		18.4	— T. DEP. 18.0 (Soft.)
						DEP. 18.7
	19					PULL-6 START-1345 End-1355 Time-10 min. Drl.-10 min
	20				6	RAN-3.3 REC.-3.4 GAIN-0.1 Unacc-0.0
	21					
474.4	22		Bottom of Hole (required depth)		22.0	DEP. & T. DEP. 22.0

ENG FORM 1836-A
JUN 67

| | PROJECT GALLIPOLIS Locks & Dam | HOLE NO. R-22/2 |

DRILLING LOG	DIVISION ORD		INSTALLATION O R H - C D		SHEET 1 OF SHEETS

1. PROJECT GALLIPOLIS LOCKS & DAM

2. LOCATION (Coordinates or Station) MOND. R-23

3. DRILLING AGENCY W.G. JAQUES Co.

4. HOLE NO. (As shown on drawing title and file number) R·23/1

5. NAME OF DRILLER FRANK BAKER

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0.0

8. DEPTH DRILLED INTO ROCK 36.3

9. TOTAL DEPTH OF HOLE 36.3

10. SIZE AND TYPE OF BIT 4"X 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL MOBILE B-53

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER

16. DATE HOLE | **STARTED** 11-15-88 | **COMPLETED** 11-16-88

17. ELEVATION TOP OF HOLE 496.6

18. TOTAL CORE RECOVERY FOR BORING %

19. SIGNATURE OF INSPECTOR

ELEVATION 496.6 a	DEPTH 0.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			-0.1 L.C @496.6-496.5		Box	
			SANDSTONE, sly., f.-m.g., m.h. w/occ. dk., mic. lam.			PULL-1
	1					START- 1446
			closely spaced, near hor. phys. along mic. lam. 496.3-495.1			END-1500
						TIME- 14 min.
						Drl - 14 min
	2				1.	RAN- 4.7
						REC- 4.6
						Loss -0.1
						UNACC.-0.1
	3					
					3.8	
	4					
						END OF SHIFT DEP & T. DEP 4.7 11-16-88
	5				2	PULL-2 START 0830 END 0842 TIME 12 min. Drl. 12 min. RAN. 2.7 REC. 2.1
	6				↕5 T. Dep Soft. ↕8 B/N (csh)	Loss -0.6 UNACC -0.0
489.9	6.7		-0.1 S. gr. cl. 489.9-489.8		7.2	
	7		INDURATED CLAY, S., r. br. slk. ve. bkn 489.8-489.4			DEP. 7.4
	8				3.	PULL-3 START 0901 End 0913 Time 12 min Drl. 12 min. RAN 4.0 REC. 3.8 Loss 0.2 UNACC 0.3
	9					
	10					

PROJECT GALLIPOLIS Locks & Dam | **HOLE NO.** R-23/1

ELEVATION a 486.6	DEPTH b 10.0	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			ICL (cont.)		3	
486.3	10.3		—0.3 LC Accum. btwn. 489.9 & 486.3		10.3 Box	10.3 T. Dep & B/H (est.) (Soft)
			SILTSTONE, cLy/sa., gr., s.-m.h.			
	11					DEP. 11.4
			— ve. bkn. (mech.) 485.7 - 484.1 y 0.5 L.C.		4.	Pull - 4 START-0944 End - 0954 Time - 10 min. Drl - 10 min. Ran. 1.9 Rec. 2.2 Gain. 0.3 Unacc.0.5
	12					
			— CLS., sly. 484.1 - 483.6			
483.6	13					— B/H 13.0 (est.)
			SILTSTONE – sa., m.h., gr., mic., occ. shy. overcored 483.6 - 483.4			DEP & T. Dep. 13.3
	14		— ptg. (mech.) @ 482.6		14.4	Pull-5 START- 1020 END - 1030 Time - 10 min Drl - 10 min RAN - 4.3 Rec. - 4.5 Gain.- 0.2 Unacc. -0.0
	15		— shy. ptg. @ 481.9 — ptg. (mech.) @ 481.5			
	16				5.	— EST. Found ELEV. (481.0)
			— shy. ptg. @ 480.1			— T. Dep. 16.5 Soft
479.6	17		grading SANDSTONE - sly., f.g., m.h. @., ha., irr. frac. 479.1 - 478.7			— B/H 17.5 (est.) DEP 17.6
	18		— ptg. (mech.) @ 478.1		17.8	Pull - 6 START - 1050 End - 1100 Time - 10 min Drl. - 10 min Ran - 5.0 REC. 5.0 Loss. 0.0 Unacc. 0.0
	19		— ptg. (mech.) @ 477.4		6	
	20		— ptg. (mech.) @ 476.6 — ptg. (mech.) @ 476.4 — ptg. (mech.) @ 475.9			
	21					
475.2	21.4		grading SANDSTONE, sly., f.-m.g., m.h., gr., occ. sly.		21.7	
	22				7	

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DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 496.6					Hole No. R-23/1	
PROJECT GALLIPOLIS Locks & Dam			INSTALLATION ORH-CD			SHEET 3 OF 4 SHEETS	

ELEVATION 474.8 a	DEPTH 22.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
					Box	
	23					T. Dep. to H. 22.5 — DEP. 22.6
			ptg. (mach.) @ 473.5		7.	PULL - 7 START - 1220 End - 1225 Time - 5 min. Drl - 5 min. Ran - 4.9 Rec - 4.2 Loss - 0.7 Unacc. 0.0
	24		ptg. (mech.) @ 472.5			
			ptg. (shy.) @ 472.1			
	25		ptg. (shy.) @ 471.9		25.3	
	26					T. Dep. 26.0
	27				8	N/R (est.) 26.7
			ptg. (mech.) 469.3			DEP 27.5
	28		ptg. (mech.) @ 469.0			PULL - 8 START - 1315 End - 1324 Time - 9 min Drl - 9 min Ran - 4.1 Rec. 4.9 Gain. 0.8 Unacc. 0.0
	29				29.0	
			shy. ptg. @ 467.2			
	30				9.	
	31		sly. w/ ptg. along ha. fracs. 466.1 - 465.5			
						T. DEP. & DEP 31.6
	32				32.6	PULL - 9 START - 1343 End - 1348 Time - 5 min Drl - 5 min Ran 4.8 Rec. 4.7 Loss. 0.1 Unacc 0.0
	33				10.	
	34		ptg. (mech.) @ 462.6			

ENG FORM 1836-A JUN 67	GPO 1969 OF—329-243	PROJECT GALLIPOLIS Locks & Dam	HOLE NO. R-23/1

PROJECT GALLIPOLIS Locks & Dam		INSTALLATION ORH-CD			SHEET 4 OF 4 SHEETS

ELEVATION 462.6 a	DEPTH 34.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
					Box	
	35		ptg. (mech.) @ 461.6		10	
	36					
460.3	36.5		Bottom of Hole (REQUIRED DEPTH)			B/N 4 T. DEP. 36.3' 0.1' IN HOLE DAP. 36.4
	37					

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DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 4 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono R-23 /STA

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-23/2

5. NAME OF DRILLER David Harper

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0.0   496.5

8. DEPTH DRILLED INTO ROCK 35.6

9. TOTAL DEPTH OF HOLE 460.9

10. SIZE AND TYPE OF BIT 4"/5k"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER NA

16. DATE HOLE STARTED 11/17/88 COMPLETED 11/17/88

17. ELEVATION TOP OF HOLE 496.5

18. TOTAL CORE RECOVERY FOR BORING 55.5 %

19. SIGNATURE OF INSPECTOR David Nugen, LMD

ELEVATION 496.5 a	DEPTH 0.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SANDSTONE – f.-m.g., m.h., gr. w/ dk. mic. lam.		Box	Pull-1 START- 1410
			m. spaced ptg. along mic. lam. throughout			End -1423
	1					Time - 13 mm
						Drl - 13 mm
					1	Ran - 4.7
						Rec - 4.7
	2					Loss - 0.0
						Uakc 0.0
	3					
					3.7	
	4					D.W.R. Good, gr.
						DEP. ± T. DEP. 4.7
	5				2	Pull-2 START -1432 End -1438 Time - 6 min Drl - 6 min Ran - 2.7 REC. - 2.5 Loss 0.2 Unacc-0.0
	6					
489.3	7 7.2		s. fot gr. cl. on contact		7.2	T. Dep. 7.0 B/H (cot.) 7.2
			INDURATED CLAY – S., slk., gr. - r.br.			DEP 7.4 Pull - 3 START- 1452
			ve. bkn. 488.8 - 488.5			End -1500 Time - 8 min
	8					Drl - 8 min Ran 2.3
			ve. bkn. 488.0 - 487.5			Rec. 2.5 GAIN 0.2
	9				3	Unacc. 0.0
						T. Dep. 9.5 End, shift B/H ± Dep. 9.7 11-18-88
	10					

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam   HOLE NO. R-23/2

PROJECT

INSTALLATION

ELEVATION 486.5 a	DEPTH 10.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			ICL (cont.)		BOX 3	PULL-4 START-0752 End-0804 Time-12 min Drl.-12 min Ran.-2.8 Rec.-2.2 Loss-0.6 Unacc.-0.0
	11				10.8	
484.6	11.9 12		S.gr.cl. coa. contact SILTSTONE, sa., shy., m.h., gr.		4	T.Dep.-11.9
						DEP.-12.5
	13					PULL-5 START-0828 End-0844 Time-16 min Drl. 16 min Ran. 3.8 Rec. 4.1 Gain. 0.3 Unacc. 0.0
			bkn. @ shg. zo. 482.8 - 482.7			
	14				14.2	
	15					
	16		overcored 480.6 - 480.4		5	Temp. Sand 481.0 T.DEP. 15.9
			shy. ptg. @ 479.9			DEP 16.3 USING 10' I.L. Double tube, 4"x5½" core bbl.
	17					PULL-6 START-0922 End-0949 Time-27 min Drl.-27 min Ran-7.9' Rec. 8.0' Gain-0.1' Unacc-0.0
	18				17.8	
	19					
					6	
	20					
	21					
474.9	21.6		Grading into SANDSTONE, shy., f.g., m.h., m.c. gr.		21.6	
	22		hor. spun ptg. @ 474.6		7	

ELEVATION TOP OF HOLE		Hole No.	R-23/2
496.5			

ELEVATION 474.5 a	DEPTH 22.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SS. (cont.)		Box	
			occ. dk. sly. lam. § zos.			
			spun. mech. ptg. @ 473.8		7	
	23		spun. mech. ptg. @ 473.4			
	24					23.9 T.Dep.
						DEP. 24.2
						PULL-7
	25				25.1	START- 1015
						End - 1028
						Time - 13 mm
						Drl - 13 min
	26		ptg. (mech.) @ 470.3			Ran. 9.5
					8.	REC. 9.8
	27					GAIN. 0.3
						UnACC. 0.0
	28		ptg. (mech.) @ 468.3			
					28.8	
	29					
			m. spaced ptgs. along dk. sly. lam. 467.7 - 464.4			
	30				9	
	31		ptg. (mech.) 465.4			
	32				32.4	
	33				10	
						DEP. & T. DEP. 33.7
	34					

ENG FORM 1836-A
JUN 67

GPO. 1969 OT—329-263

PROJECT GALLIPOLIS LOCK & DAM

HOLE NO. R-23/2

ELEVATION 462.5 a	DEPTH 34.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SS. (cont.)		Box	
	35				10.	
			BOTTOM OF HOLE (REQUIRED DEPTH			PAY DEP. 35.6
	36					
	37					Drilled DEP. 37.1
	38					
	39					

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DRILLING LOG	DIVISION ORH	INSTALLATION ORH-CD	SHEET 1 OF 4 SHEETS

1. PROJECT GALLIPOLIS Lock & DAM

10. SIZE AND TYPE OF BIT 4" X5½"

2. LOCATION (Coordinates or Station) MONO R-24

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL

4. HOLE NO. (As shown on drawing title and file number) R-24/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A | **DISTURBED** N/A | **UNDISTURBED** N/A

5. NAME OF DRILLER F. DAVID HARPER

14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | **STARTED** 11-16-88 | **COMPLETED** 11-16-88

7. THICKNESS OF OVERBURDEN 0.0   496.5

17. ELEVATION TOP OF HOLE 496.5

8. DEPTH DRILLED INTO ROCK 35.5

18. TOTAL CORE RECOVERY FOR BORING 35.5

9. TOTAL DEPTH OF HOLE 461.5

19. SIGNATURE OF INSPECTOR FMN

ELEVATION 496.5	DEPTH 0.0	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
			SANDSTONE - f.-m.g., m.h., gr. m.f.		Box	11-16-88
			sta. 496.5-496.4			Pull - 1
			mk. phy @ 496.3; 495.9;			START - 1437
	1		495.5, 495.3, 495.0,			End - 1446
			494.6 & 494.1:			Time - 9 min.
						Drl. - 9 min
					1	RAN - 5.0
	2					REC - 4.9
						Loss - 0.1
						Unacc. 0.0
	3					
					3.9	
	4					
					4.9 T.DEP	DEP - 5.0
	5					Pull - 2
						START - 1453
						End - 1500
						Time - 7 min
	6				2	Drl. - 7 min
						RAN - 2.4
489.7	6.8		s.gr. cl. co3 contact.		6.8 T DEP	REC - 1.9
	7		INDURATED CLAY, -s., r. br., slk.			Loss - 0.5
			prob. area of 0.6 ft. L.C. (mech.)			Unacc. 0.0
						End. of shift
	8		vc. bkn., s. 489.1-488.3		7.7	DEP 7.4
						11-17-88
						START - 0735
						End - 0746
						Time - 11 min.
	9				3	Drl. 11 min.
					9.0 T. DEP	RAN 2.1
						REC. 2.1
						Loss 0.0
						Unacc
			prob. area of 0.1 LC. (mech.)			B/H @ DEP 7.5
486.6	7.9 10					

| PROJECT GALLIPOLIS LOCK & DAM | | | INSTALLATION ORH-CD | | | SHEET 2 OF 4 SHEETS | |

ELEVATION 486.5 a	DEPTH 10.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CLAYSTONE, gr., s., w/ occ. slk. ptgs.		BOX 3.	PULL-4 START-0830 End-0834 Time-4 min Drl.-4 min Ran-1.6 Rec-1.2 Loss-0.4 Unacc-0.1
	11				10.9	10.5 T. DEP. 10.9 EST. DEP DEP 11.1
484.5	12		grading into			PULL-5 START-0856 End-0902 Time-10 min Drl.-10 min RAN-3.0 REC-3.2 GAIN-0.2 UnAcc-0.0
			SILTSTONE - gr., shy., m.h. ptg. @ 484.0, 483.8, 483.5, 483.3		4.	
	13					
	14					13.5 T. DEP B/H & DEP.-14.1
			bkn. w/ core spins @ 481.7 - 481.5		14.1	PULL-6 START-0933 End-0942 Time-9 min Drl - 9 min RAN - 2.0 REC - 2.0 Loss - 0.0 Unacc. 0.0
481.4	15 15.1		grading into SANDSTONE, sly., f.g., m.h., gr.; occ. shy. lam./zos.			
	16		mech. ptg. @ 480.6		5.	15.8 T. DEP B/H & DEP.-16.1
			ptg. @ shy. zo. @ 480.1 ptg. @ shy. lam. @ 479.9			PULL-7 START-1000 End - 1015 Time - 15 min Drl. - 15 min RAN - 4.3 REC - 4.3 Loss - 0.0 Unacc-0.0
	17		ptg. @ shy zo. @ 479.4			
	18		mech. ptg. @ 478.2		18.1	
	19		bkn. ptgs @ shy. zo @ 477.6 mech. ptg. @ 477.2		6.	
	20		closely spaced, hor ptgs. (prob. mech.) 476.7-476.1			20.0 T. DEP B/H & DEP-20.4
	21		sand content increasing w/ depth mech. ptg. @ 475.1		21.4	
	22				7	

PROJECT Gallipolis Lock & Dam				INSTALLATION ORH-CD			SHEET 3 OF 4 SHEETS

ELEVATION 479.5 a	DEPTH 22.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			55.(Cont.)		Box	PULL-8
			— mech. ptg. @ 474.3			START- 1044
			— mech. ptg. @ 474.0			End - 1055
	23					Time - 11 min.
			— mech. ptg. @ 473.3			Drl. - 11 min.
			— mech. ptg. @ 473.0		7.	RAN - 4.9
			— mech. ptg. @ 472.8			REC. - 4.9
						LOSS - 0.0
	24					UnACC. - 0.0
			— mech. ptg. @ 472.0			
						24.4 T.DEP
	25					
					25.3	B/N & DEP. - 25.3
						PULL - 9
	26					START- 1123
						End - 1135
						Time - 12 min.
						Drl - 12 min.
						RAN - 3.9
			— mech. ptg. @ 469.7		8.	REC. - 3.9
	27					LOSS - 0.0
						UnACC. 0.0
			— mech. ptg. @ 468.8			
	28					
			— mech. ptg. @ 468.0			
					28.7	
	29				28.9	
						B/N & DEP. 29.2
						PULL-10
			— mech. ptg. @ 466.8			START- 1240
	30					End - 1248
			— mech. ptg. @ 466.3			Time - 8 min
						Drl - 8 min
						RAN - 4.6
			— mech. ptg. @ 465.7			REC - 4.4
	31					LOSS - 0.2
					9.	UnACC. - 0.0
			— mech. ptg. @ 464.8			
	32		— mech. ptg. @ 464.5			
					32.6	
	33		— mech. ptg. @ 463.5			33.0 T.DEP
					10.	
					33.4 EST. DEP.	
						DEP. 33.8
	34					

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ELEVATION 462.5 a	DEPTH 34.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SS. (cont.) Mech. plg. @ 462.4		Box 10	Pull - 11 START- 1321 End - 1330 Time - 9 min. Drl - 9 min Ran · 1.7 Rec · 1.9 Gain 0.2 Unacc. 0.0
	35		Thin. mic. lam., sli. wea. 461.3 - 460.8			
460.8	35.7		BOTTOM OF HOLE (REQUIRED DEPTH)			BH - DEP. 35.7
	36					
	37					

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DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF SHEETS

1. PROJECT Gallipolis Locks & Dam

2. LOCATION (Coordinates or Station) Mono. R-24

3. DRILLING AGENCY W. G. Jaques Co.

4. HOLE NO. (As shown on drawing title and file number) R-24/2

5. NAME OF DRILLER David Harper

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0.0 (496.8)

8. DEPTH DRILLED INTO ROCK 35.9

9. TOTAL DEPTH OF HOLE 35.9 (460.9)

10. SIZE AND TYPE OF BIT 4" x 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER —

16. DATE HOLE STARTED 11-18-88 COMPLETED 11-21-88

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING %

19. SIGNATURE OF INSPECTOR David Harper

ELEVATION 496.8 (a)	DEPTH 0.0 (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
			SANDSTONE - sly., f.-m.g., m.h., m.gr. w/ thin mic. lam.		Box	PULL-1
	1		0.1 L.C (mech.) 496.8-496.7 o., lea., vert. frac. 496.7-496.3 :		1	START- 1245 END - 1300 TIME- 5 min. Drl- 5 min. RAN- 4.6 REC.- 4.0 Loss- 0.6 Unacc.- 0.1
	2					
	3				3.6	
	4		spun., overcored 492.7 - 492.3		4.1 T. DEP DEP. 4.6	
	5				2.	PULL-2 START- 1318 END - 1321 TIME- 3 min. Drl- 3 min. RAN- 2.9 REC.- 3.2 Gain- 0.3 Unacc.- 0.0
	6					
489.7	7		INDURATED CLAY, s., r.br.-gr., slk. S., fat, gr. cl. 489.7-489.5		7.1 7.3 T. DEP. DEP. 7.5	
	8				3.	PULL-3 START- 1352 END - 1405 TIME- 13 min. Drl- 13 min. RAN- 1.9 REC.- 2.1 Gain- 0.3 Unacc.- 0.0
	9					T. DEP. ≠ DEP. -9.4
	10					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Locks & Dam   HOLE NO. R-24/2

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| PROJECT GALLIPOLIS Locks & Dam | INSTALLATION ORH-CD | SHEET 2 OF 4 SHEETS |

ELEVATION 486.8 a	DEPTH 10.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			ICL (cont.)		BOX 3.	PULL-4
					10.5	START- 1448
			prob. Area of O.S L.C. (mech.) 486.3 - 485.8			END - 1502
	11					TIME - 14 min
						Drl. - 14 min.
						RAN - 4.3
						REC. - 3.8
			S. 485.2 - 484.6			LOSS - 0.5
						UnAcc. - 0.2
484.6	12 12.2				4.	
			CLAYSTONE - sly., gr., S.			
	13					
					13.4 T. DEP	END OF SHIFT DEP. 13.7
			0.15 S.gr. cl. @ 483.1 - 482.95			11-21-88
482.7	14		cl. coa. ptg. @ 482.8		14.1	PULL-5
			SILTSTONE - sa., occ. shy., gr., m.h.			START- 0752
						END - 0800
						TIME - 8 min.
						Drl. - 8 min.
	15					RAN - 3.9
						REC - 3.9
			gr. cl. coa. ptg. @ 481.3			LOSS - 0.0
						UnAcc. - 0.0
					5.	Found. (EL. 481.0)
	16		mech. ptg. @ 480.6			
			mech. ptg. @ 480.2		16.5 T. DEF.	
	17		mech. ptg. @ 479.6			
					17.3 Est. DEP.	
					17.6	DEP. 17.6
	18		Sand content increasing w/depth.			USING 10' core bbl. PULL-6
						START- 0840
						END - 0900
						TIME - 20 min
478.0	18.8					Drl. - 20 min.
	19		SANDSTONE, sly., f.g., m.h., m.q. w/ occ. sly. lam. & zos.			RAN - 8.1
					6.	REC. - 8.1
			sly. zo. 477.6 - 477.3			LOSS - 0.0
	20					UnAcc. - 0.0
	21					
			sly. zo. 475.6 - 475.4		21.4	
	22		closely spaced hor. ptgs. 475.1 - 474.3		7.	

| ENG FORM 1836-A JUN 67 | GPO 1960 OF-329-243 | PROJECT GALLIPOLIS Locks & Dam | HOLE NO R-24/2 |

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 496.8		Hole No. R-24/2
PROJECT GALLIPOLIS LOCKS & DAM	INSTALLATION ORH-CD		SHEET 3 OF 4 SHEETS

ELEVATION 474.8 a	DEPTH 22.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SS. (cont.)		BOX	
	23				7.	
	24					
						24.6 T. DEP
	25					25.0
						25.4 EST. DEP
471.1	25.7		grading			DEP. 25.7
	26		SANDSTONE, sly., f.-m.g., m.h., gr. w/ thin, dk. mic. lam.		8.	PULL-7 START- 0936 END- 0951 TIME- 15 min.
	27		occ. ptgs. along mic. lam.			Drl. 15 mm. RAN 8.8 REC. 8.8
	28				27.8	Loss 0.0 Unacc. 0.0
	29				9.	
	30					
	31				31.4	
	32				10.	
	33					
	34					33.9 T. DEP.

PROJECT GALLIPOLIS Locks & DAM	INSTALLATION ORH-CD		SHEET 4 OF 4 SHEETS

ELEVATION 462.8 a	DEPTH 34.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SS. (cont.)		Box	34.2 EST. DEP.
					10.	DEP. 34.5
	35				35.0	PULL-B START-1025 END-1035 TIME-5min Drl.-5min RAN-1.4 REC-1.7 LOSS-0.0 UNACC. 0.0
					11.	35.6 T. DEP.
	36		BOTTOM OF HOLE (REQUIRED DEPTH)			DEP. 35.9
	37					

ENG FORM 1836-A
JUN 67

GPO 1949 OF—325-243

PROJECT GALLIPOLIS Locks & DAM	HOLE NO R-24/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 4 SHEETS

1. PROJECT GALLIPOLIS Locks & DAM

2. LOCATION (Coordinates or Station) MOND. R-25

3. DRILLING AGENCY W. G. JAQUES Co.

4. HOLE NO. (As shown on drawing title and file number) R-25/1

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0.0 (496.7)

8. DEPTH DRILLED INTO ROCK 35.7

9. TOTAL DEPTH OF HOLE 35.7 (461.0)

10. SIZE AND TYPE OF BIT 4" X 5 ½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER —

16. DATE HOLE STARTED 11-21-88 COMPLETED 11-22-88

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING %

19. SIGNATURE OF INSPECTOR David Morgan

ELEVATION 496.7 a	DEPTH 0.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SANDSTONE. Sly., f.-m.g., m.h., m.gr. w/ occ. dk. mic. lam.		Box	PULL-1
						START- 1200
			ptgs. along mic. lam. @ 496.5, 496.2, 495.9, 495.4, 495.0, & 493.8			END - 1212
	1					TIME - 12 min
						Drl. - 12 min.
						RAN - 4.6
						REC. - 4.6
					1.	LOSS - 0.0
	2					UNACC. 0.0
	3					
					3.8	
	4					T. DEP & DEO 4.c
						PULL-2
	5					START- 1225
						END - 1232
					2.	TIME - 7 min
						Drl - 7 min
	6					RAN - 2.9
						REC - 2.7
						Loss - 0.2
	7					UNACC - 0.0
489.4	7.3		0.1' s. gr. cl. @ contact		7.3	7.3 T. DEP.
			INDURATED CLAY, S., Slk, gr./r. br.			DEP. 7.5
						PULL-3
	8		0.8 L.C. (Accum.) btwn 489.4 - 486.5			START 1245
						END - 1300
					3.	TIME - 15 m..
						Drl. - 15 m..
	9					RAN - 2.9
						REC - 2.1
						Loss - 0.8
						UNACC. - 0.8
	10					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT GALLIPOLIS LOCKS & DAM | HOLE NO. R-25/1

| PROJECT GALLIPOLIS Locks & Dam | | INSTALLATION | ORH-CD | | | SHEET 2 OF 4 SHEETS |

ELEVATION 486.7 a	DEPTH 10.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			ICL (cont.)		Box	10.2 T.DEP
486.3	10.4					DEP. 10.4
			CLAYSTONE - Shy., gr./r.br. S.		3	PULL - 4
						START - 1325
	11		Closely spaced ptgs w/ Spins			END - 1340
						TIME - 15 min
						Drl. - 15 min.
					11.4	RAN - 2.8
						REC. - 2.3
						Loss - 0.5
						Unacc. - 0.0
	12					
						12.5 T.DEP.
	13				4.	DEP. 13.2
						PULL - 5
						START - 1355
						END - 1414
	14					Time - 19 min
						Drl. - 19 min
						RAN - 4.2
						REC. - 1.9
	15					Loss - 2.3
						Unacc. - 0.7
						15.1 T.DEP.
					15.4	
	16					
480.2	16.5		s. gr. cl. cas. ptg.			
			SILTSTONE - Sz., gr., m.h., w/ occ. ss. lens.		5.	
	17					DEP. 17.4
					17.5 T.DEP.	PULL - 6
						START 1435
						End 1438
						Time 3 min.
	18				17.9 EST.	Drl. 3 min.
			Core spins btwn. 478.3 - 477.9			RAN 1.2
						REC. 2.8
						GAIN 1.6
						Unacc. 0.0
						DEP. 18.6
					18.8	PULL - 7
	19					START - 1500
					19.1 T.DEP.	End - 1505
						Time - 5 min.
						Drl. - 5 min.
						Ran - 1.3
						REC. - 1.8
			bkn. (mech.)		19.7 EST	GAIN - 0.5
			477.0 - 476.6		End of SHIFT	Unacc. - 0.0
	20					DEP. 19.9
					11-22-88	PULL - 8
						START - 0732
					6	END - 0741
476.1	20.6		Shy. ptg. @ contact			TIME - 9 min.
			SANDSTONE - sly., f.g., m.h. m.gr. w/ sly. lam. & zos.			Drl. - 9 min
	21					RAN - 3.4
						REC. - 3.2
						Loss - 0.2
						Unacc. - 0.0
	22					

| ENG FORM 1836-A JUN 67 | GPO 1969 OF-329-243 | PROJECT GALLIPOLIS Locks & Dam | HOLE NO R-25/1 |

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 496.7				Hole No. R-25/1	
PROJECT GALLIPOLIS Locks & Dam		INSTALLATION ORH-CD			SHEET 3 OF 4 SHEETS	

ELEVATION 474.7 a	DEPTH 22.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SS (cont.)		Box 6	
474.3	22.4		grading		22.4	22.5 T. DEP
			SANDSTONE: f., m.g., m.h., gr. bkn. (mech.) 473.8 - 473.4			22.9 EST.
	23					DEP. 23.2
						PULL - 9
						START - 0759
						END - 0807
	24		- CLS. lam. @ 472.6 - 472.5 w/ gr. cl. coa.		7.	TIME - 8 min.
						Drl. - 8 min.
						RAN - 4.9
						REC. - 4.4
	25					LOSS - 0.5
						Unac - 0.0
					25.7	
	26					
	27		bkn. (mech.) 469.4 - 469.1		8.	26.9 T. DEP.
						27.3 EST
	28		occ. ptg. along mic. lam.			DEP. 28.1
						USING 10' bbl.
						PULL - 10
	29					START - 0828
						ENC - 0846
						TIME - 18 min
						Drl. - 18 min
					29.4	RAN - 9.4
	30					REC. - 9.8
						GAIN - 0.4
						Unac - 0.0
	31				9.	
	32					
	33				33.2	
	34				10	

ENG FORM 1836-A JUN 67	GPO 1949 OF—329-243	PROJECT GALLIPOLIS Locks & Dam	HOLE NO R-25/1

| DRILLING LOG (Cont Sheet) | ELEVATION TOP OF HOLE | 496.7 | | Hole No. | R-25/1 |

PROJECT GALLIPOUS Locks & Dam   INSTALLATION ORH-CD   SHEET 4 OF 4 SHEETS

ELEVATION 462.7 a	DEPTH 34.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SS (cont.)		Box 10.	
	35					
					35.7	
			REQUIRED DEPTH.			36.0 T. DEP.
	36					
	37					32.1 EST.
						(overdrilled) DEP. 375
	38					

GPD 1969 OF—329-243

PROJECT GALLIPOLIS Locks & Dam   HOLE NO. R-25/1

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DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 4 SHEETS

1. PROJECT GALLiPOLiS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO R-25 1STA

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-25/2

5. NAME OF DRILLER A. TiCE

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0.0 497.1

8. DEPTH DRILLED INTO ROCK 36.1

9. TOTAL DEPTH OF HOLE 461.0

10. SIZE AND TYPE OF BIT 4"/ 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 11-22-88 COMPLETED 11/22/88

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 36.1 %

19. SIGNATURE OF INSPECTOR DAViD NUGEN JMD

ELEVATION 497.1 a	DEPTH 0.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SANDSTONE - sly., m.g., m.h., mic., m.gr. w/ occ. sly. lam. Sta. 496.8 - 496.2 0.3 L.C. (mech.) 497.1 - 496.8 m. spaced ptgs. along sly. lam.		BOX 1.	PULL-1 START- 0917 END - 0927 Time - 10 min Drl. - 10 mm RAN - 4.6 REC - 4.3 Loss - 0.3 UnAcc- 0.3
	3.9					
						T.DEP. & DEP 4.6
					2.	PULL-2 START- 0937 End - 0943 Time - 6 min Drl - 6 min Ran - 3.6 REC - 3.6 Less - 0.0 UnAcc- 0.0
	7.5					7.7 T.DEP
489.0	8		S. gr.d. 489.0 - 488.9 INDURATED CLAY-S., r.br./gr., slk. bkn., S. throughout		3.	DEP.8.2 PULL-3 START 1027 End 1033 Time 6 min Drl 6 min RAN 2.0 REC 2.0 Less 0.0 UnAcc 0.0
	10					T.DEP 10.0

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT GALLiPOLiS LOCK & DAM HOLE NO. R-25/2

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE	497.1			Hole No. R-25/2	

PROJECT Gallipolis Lock & Dam **INSTALLATION** ORH-CD **SHEET** 2 OF 4 SHEETS

ELEVATION 487.1 a	DEPTH 10.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			ICL. (cont.)		Box 3	DEP. 10.2
						PULL-4
					10.6	START- 1053
	11					End - 1101
						Time - 8 min
						Drl. - 8 min
						RAN - 2.0
						REC - 2.0
						Loss - 0.0
					11.2 T.DEP	Un.Acc. 0.0
	12					
						DEP. 12.2
			- 0.2' L.C. @ 484.7-484.6		4	PULL-5
484.5	12.6					START- 1115
			CLAYSTONE, sly., gr., s.-m.h.			End -1124
	13					Time - 9 min.
						Drl. - 9 min
						RAN - 2.8
						REC - 2.7
	14					Loss - 0.1
					14.2	UNACC. 0.1
					14.7	
	15		hor. ptg. (mech.) @ 481.8			DEP. 15.0
						PULL-6
						START- 1134
						End - 1141
					5.	Time - 7 min
	16					Drl. - 7 mm
						Ran - 2.4
			hor. ptg. (mech.) @ 480.5			REC - 2.4
						loss - 0.0
						UnAcc - 0.0
	17					
479.9	17.2		grading		12.3	DEP. 17.4
			SILTSTONE, s., gr., m.h. occ. shy.; w/occ. ss. len.			PULL-7
			0.3' L.C. (mech.) prob. @ start of run			START- 1225
	18		mech. ptg @ 479.0			End - 1236
			mech. ptg @ 478.6			Time - 11 min
						Drl. - 11 mm
						RAN - 5.0
	19					REC - 4.1
						Loss 0.9
477.7	19.4		grading			UnAcc. 0.3
			SANDSTONE - sly., f.g., m.h., gr., mic.		6	
	20		m. spaced shy. plys throughout.			
	21					
					21.5	
					21.7 T. DEP	
	22					

PROJECT GALLIPOLIS LOCK & DAM					INSTALLATION OEH-LD				SHEET 3 OF 4 SHEETS

ELEVATION 475.1 a	DEPTH 22.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SS (cont.)			
						DEP. 22.4
						PULL-8
						START- 1251
	23					End - 1301
						Time - 10 min
						Drl. - 10 min
					7	Ran - 4.0
						Rec - 4.1
	24					Gain - 0.1
						Unacc - 0.0
	25				25.2	
					25.3 T. DEP.	
	26					
						DEP. 26.4
						PULL-9
					8	START- 1315
	27					End - 1323
						Time - 8 min
						Drl. - 8 min
						Ran - 4.9
						Rec - 5.0
	28					Gain - 0.1
						Unacc - 0.0
					28.7	
	29				29.3 T. Dep.	
	30					
					9	
	31					
						DEP. 31.3
						PULL-10
						START- 1347
						End 1402
	32					Time 15 min
					32.2	Drl. 15 min
						Ran 6.2
						Rec. 5.2
	33				10	Loss 1.0
						Unacc 0.0
	34					

ENG FORM 1836-A
JUN 67

GPO 1969 OF—328-243

PROJECT
GALLIPOLIS LOCK & DAM

HOLE NO
R-25/2

			ELEVATION TOP OF HOLE 497.1			Hole No. R-25/2

PROJECT Gallipolis Lock & Dam   INSTALLATION ORH-CD   SHEET 4 OF 4 SHEETS

ELEVATION 463.1 a	DEPTH 34.0 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SS (Cont.)			
					10,	
	35					
461.1	36		BOTTOM OF HOLE REQUIRED DEPTH			36.0 T. DEP.
						1.0' core left in Hole
	37					(overdrilled) DEP. 37.0

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DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 4 SHEETS

1. PROJECT GALLIPOLIS LOCKS & DAM

2. LOCATION (Coordinates or Station) MONOLITH R-26

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-26/1

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0.0 (496.9)

8. DEPTH DRILLED INTO ROCK 35.9

9. TOTAL DEPTH OF HOLE (461.0)

10. SIZE AND TYPE OF BIT 4" / 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER

16. DATE HOLE STARTED 11/22/88 COMPLETED 11/23/88

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 35.7 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION 496.9 a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SANDSTONE Light gray, M.H. med to fine grained, micaceous		Box	Pull #1 START 2:58 RAN 0.7 END 3:08 REC 0.7 Time 10 min Loss 0 DRL 10 min UNACC 0 T. Dep + Dep .7
	1		mech broken 496.4 - 494.2		1	Pull #2 START 8:05 END 8:15 Time 10 min DRL 10 min RAN 5.0 REC 5.0 LOSS 0 UNACC 0
494.5	2		SANDSTONE M.H, C.G occ -X-Bedding non micaceous.		3.5	
	3					
	4				2	
	5					
	6					T. Dep + Dep 5.7 Pull #3 START 8:33 RAN 1.6 END 8.37 REC 1.5 Time 4 min DRL 4 min Loss -.1
489.9	7		INDURATED CLAY S., Light gray to reddish brown, occ broken gray above 488.9 - reddish brown below. occ gray-sh-green claystone nodules		6.9 3	7 T. Dep UNACC 0 DEP 7.3 Pull #4 START 8:47 REC 2.9 END 8:56 Loss +.2 Time 9 min UNACC 0.0 DRL 9 min RAN 2.7 9.2 T Dep
	8					
	9					
	10				10.	DEP 10.0

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam

HOLE NO. R 26/1

	ELEVATION TOP OF HOLE					496.9		Hole No. R-26/1	

PROJECT: GALLipoLis LockS & DAm   **INSTALLATION:** ORH-CP   **SHEET** 2 **of** 4 **SHEETS**

ELEVATION 496.9 a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			INDURATED CLAY Lightgray to Reddish BROWN, SOFT, occ Broken		Box	Pull #5 Loss .1 START 9:27 UNACC 0.0 End 9:34 T.DeP Time 7min 10.5 DRL 7min RAN 1.2 REC 1.1 DeP 11.2
	11					
	12				4	Pull #6 START 10:19 End 10:24 Time 5 min DRL 5 min RAN 3.9 REC 2.9 LOSS -1.0 UNACC .4
484.4			SHALE gRAy to gREENish-gRAy SOFT, CLAyey			
	13				13.7	
	14					T.DeP 14.3
	15					DeP 15.1
	16				5	Pull #7 START 10:36 End 10:51 Time 15min DRL 15min RAN 3.7 REC 4.9
	17				17.1	Loss -0.4 UNACC 0.0
	18					T Dep 18.5
	19					DEPT 19.0
477.8			Si2tSTONE gRAy, S TO m.H. m Tc F.g. .shaley gRading to oundation with depth.			Pull #8 START 12:05 End 12:16 Time 11min DRL 11min RAN 3.8
	20				6	
476.1			SHALE SANdSTONE gRAy m.H., m&fc Fg micaccous, Fine Bd PLans		20.8	REC 3.6 LOSS -0.2 UNACC 0.2
	21				7	
	22					

PROJECT	INSTALLATION	SHEET
GALLIPOLIS	ORH·CD	3 OF 4 SHEETS

ELEVATION 474.9 a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
431.8			SANDSTONE		Box	Pull #8
474.5			SHALE GREEN·GRAY M.H. F.g.			
	23					Pull #9
					7.	START 12:33
						END 12:43
						TIME 10 min
	24					DRL 10 min
					24.4	RAN 4.9
						REC 4.8
	25					Loss -0.1
						UN ACC 0.0
	26					I Dep 25.7
					8.	
	27					
	28				28.00	Dept 27.7
						Pull #10
						START 1:04
						END 1:23
	29					TIME 19 min
						DRL 19 min
						RAN 9.8
	30					REC 9.5
						Loss .3
						UN ACC 0.0
	31				9	
	32				31.9	
					10.	
	33					
	34					

ENG FORM 1836-A JUN 67	GPO 1969 OF—329-243	PROJECT Gallipolis Lock & Dam	HOLE NO R-26/1

ELEVATION 462.9 a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SANDSTONE		Box 10	Pull #10
			GRAY mH Fg to mg			
			MICACEOUS, Fine Bd Plan			T.Depth 34.8
	35					
461.2			Bottom Hole		35.7	Box To 35.7
	36					
	37					
						Dep 375
	38					

PROJECT

INSTALLATION ORH-CD

SHEET OF SHEETS

DRILLING LOG

DIVISION		INSTALLATION		SHEET 1
DRILLING LOG	ORD	ORH-CD		OF SHEETS

1. PROJECT		10. SIZE AND TYPE OF BIT	
Gallipolis Lock & Dam			

2. LOCATION (Coordinates or Station)
mono   14+80.0 "B"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
M.S.L.

3. DRILLING AGENCY
W. G. Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL
B-57 mobile

4. HOLE NO. (As shown on drawing title and file number)
R-26/2

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED	UNDISTURBED
	N/A	N/A

5. NAME OF DRILLER
DAVE HARPER

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE	STARTED	COMPLETED
	11-30-88	11-30-88

7. THICKNESS OF OVERBURDEN 0 - 494.4

17. ELEVATION TOP OF HOLE 494.4

8. DEPTH DRILLED INTO ROCK 33.7

18. TOTAL CORE RECOVERY FOR BORING 33.7 %

9. TOTAL DEPTH OF HOLE 461

19. SIGNATURE OF INSPECTOR)st

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1		SS lg. md., m.fg., occ mic.			Pull #1 START 7:51 Ran .05 End 8:04 Rec .05 Time 13 Loss 0 Drl 13 unacc 0 Ti & TP Depth 0.5
	2				1	Pull #2 START 8:13 Loss 0.4 End 8:52 unacc .04 Time 19 Drl 19 Ran 3.6/3.5 Rec 3.1
491.5	3				3.7	
	4		ICL. Sy mech. bk.@ 494.7 to 499.2			Ti Depth 4.0 TP Depth 4.1
	5				2	Pull #3 START 8:50 Rec 2.4 End 9:06 Loss .01 Time 16 unacc 0 Drl 16 Ran 2.1
	6				6.6	T.P Depth 6.2 TP Depth 6.3
487.6	7		CLS sfr @ 492.8 to 492.5			Pull #4 START 9:40 Loss 0 End 9:55 unacc 0 Time 15 Drl 15 Ran #2.2/2.4 Rec 2.3
486.6	8				3	Ti Depth 8.5 TP Depth 8.6
	9		ICL. r. br., s. ves. occ. mod. w/gr. gn.gr. Cl., occ gr cl/s frags			Pull #5 START 10:07 Ran *1.1/1.4 End 10:19 Rec 1.0 Time 12 Loss 0 Drl 12 unacc 0
	10		SLS lt. gr. cls. @ 49.1.5 to 490.7 sevr. mech. bkn.: 490.2 to 489.7, 488.6		10.1	Ti Depth 9.6 TP Depth 10.0
	11		CLS. gr. s sh.			Pull #6 START 10:35 Ran *0.8/0.7 End 10:42 Rec 0.8 Time 7 Loss 0 Drl 7 unacc 0
	12				4	Ti Depth 10.4 TP Depth 10.7
	13				13.5	Pull 7 START 10:54 Loss 0.2 End 11:04 unacc 0.2 Time 10 Drl 10 Ran *3.4/3.7 Rec 3.6 Ti Depth 13.8
	14					TP Depth 14.4
	15				5	Pull #8 START 11:25 Loss 0 End 11:31 unacc 0 Time 6 Drl 6 Ran *0.8/0.7 Rec 0.8 Ti Depth 14.6
	16					
	17				170	TP Depth 15.1
	18				6	Pull #9 START 12:41 unacc .04 End 12:59 Time 18 Drl 18 Ran 4.2 Rec 3.8 Loss .04
	19					Ti Depth 18.8
	20					TP Depth 19.3

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

(TRANSLUCENT)

PROJECT	HOLE NO.
Gallipolis Lock & Dam	R-26/2

PROJECT _Gallipolis Lock & Dam_   INSTALLATION _ORH ·CD_

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	21				20.8	Pull 10 START 1.19 End 1.35 Time 16 Drl 16 Ran +5.0 Rec 4.9 5.0 Loss 0 Unacc 0
472.3	22					
	23		SLS gr. to gn.gr. S. to m.hd sh@ top grading S. Sev mach. bkn: 479.7 = 480.1 486 1 = 485.6, 475.9 . 475.7 484.5 , 484.3 mach spin: 485.4, 483.7, 4833, hi ang machfraze 486.5 to 486.1, 475.2 slk @ 483.6 bkn 483, 482.6 sh. 479.0 478.9 SS gr. ll gr m.d hd mxd S. g, occ mic grad C w/ depth occ x bdd, bkh 471.6 mch spin less d616 - 4619		7	
	24				24.3	Tl Depth 23.8 TP Depth 24.2
	25					Pull # 11 START 1.56 End 2.16 Time 20 Drl 20 Ran 10.0 Rec 9.9 9.8 Loss 0.2 unacc 0.2
	26				8	
	27				27.8	
	28					
	29					
	30				9	
	31				31.4	
	32					
	33				10	
461			Bottom Hole		33.8	Tl Depth 33.8 TP Depth 34.1

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DRILLING LOG

DIVISION ORD	**INSTALLATION** ORH-GD	**SHEET** 1 OF SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) mono R 27 Sta 14+70 "B"

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-27/1

5. NAME OF DRILLER Dave Harper

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN o 499.5

8. DEPTH DRILLED INTO ROCK 34.1

9. TOTAL DEPTH OF HOLE 460.1

10. SIZE AND TYPE OF BIT

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) m.s.l.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/a | DISTURBED N/a | UNDISTURBED N/a

14. TOTAL NUMBER CORE BOXES 8

15. ELEVATION GROUND WATER n/a

16. DATE HOLE STARTED 12-1-88 COMPLETED 12-1-88

17. ELEVATION TOP OF HOLE 494.5

18. TOTAL CORE RECOVERY FOR BORING 34.1 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
494.0			SLS			Pull #1
	1		SH g.s. cl btn w/poss 0.1 Loss			START 7:25 End 7:49 Time 24 Drl 24 Ran 4.3* 4.5 Rec 4.2 Loss 0.1 Unacc 0.1
	2				1	
	3				3.5	
490.2	4					TL Depth 4.3 TP Depth 4.5 Pull #2
	5		ICL r. br. s to ve s. occ mot. w/g to gr. g. cl, occ gr. g. cls frage. lt g. fatty cl @ 490.2-490.0 sev. br (poss mach) 489.-485.0 poss loss -spin loss @ 486.9 & 486.7. poss.			START 8:04 End 8:28 Time 24 Drl 24 Ran 3.8* 4.1 Rec 2.2 Loss 1.6 Unacc 1.6
	6				2	
	7					
486.4	8				8.1	TL Depth 8.1 TP Depth 8.6 Pull #3
	9		SLS g., s., to mod. h., gradational w/sh. toward top, & sa & bottom			START 8:58 End 9:13 Time 15 Drl 15 Ran +4.2 4.0 Rec 4.2 Loss -0 Unacc 0
	10		- Clay scoms 484.0, 483.2 SS		3	
	11					
	12				12.1	TL Depth 12.3 TP Depth 12.8 Pull #4
	13					
	14				4	START 9.33 End 9.44 Time 11 Drl 11 Ran 3.2* 3.9 Rec 4.0 Loss 0 Unacc 0
	15				15.1	
	16					TL Depth 16.3 TP Depth 16.7 Pull #5
	17				5	START 10:00 End 10:10 Time 10 Drl 10 Ran +4.4 5.0 Rec 4.9 Loss -0 Unacc 0
	18				18.6	
	19				6	TL Depth 19.9

PROJECT: Gallipolis Lock & Dam   INSTALLATION: ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21				6	
473.0						TP Depth 21.7
	22		SS gr to Lt gr. med h		22.3	Pull #6
			med to f. g, occ			START 10:26
			mic. gradational			End. 11:04
	23		c with/ depth			Time .38
						Drl 21.
	24				7	Ran 4.8
						Rec 4.8
	25					Loss σ
						Unacc
	26				26.0	Ti Depth 26.0
						TP Depth 26.6
	27					Pull #7
						START 11:25
	28				8	End 11:37
						Time 12
						Drl 12
	29					Ran 4.0
					29.6	Rec 4.5
						Loss 3.6
						Ti Depth 28.7
	30					TP Depth 30.0
						Pull #8
	31				9	START 12:31
						End 12:46
						Time 15
	32					Drl 15
						Ran 4.3
						Rec 4.7
	33				33.0	4.8
						Loss
461.0					10	Unacc
	34		Bottom Hole		34.1	
460.1						TP Depth 34.7
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					

ENG FORM 1836-A JUN 67   GPO 1965 OF—329-243   PROJECT: Gallipolis Lock & Dam   HOLE NO. R 27./1

| DRILLING LOG | DIVISION ORD | INSTALLATION ORH - CD | | SHEET 1 OF 2 SHEETS |

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) mono STR. 14+36 "B"

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number)

5. NAME OF DRILLER A. Tice

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 - 490.9

8. DEPTH DRILLED INTO ROCK 29.9

9. TOTAL DEPTH OF HOLE 461.0

10. SIZE AND TYPE OF BIT 4 X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B 53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12-1-88 COMPLETED 12-2-88

17. ELEVATION TOP OF HOLE 490.9

18. TOTAL CORE RECOVERY FOR BORING 29.9 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
490			SS		1	Pull #1 START 2:38 End 2:51 Loss 0.3 Time 13 unacc 0.3 Drl 13
	1		SS r. gr., med hd., med to f. 9		1	Ran 1.9 / 2.0 Rec 1.5 TI Depth 2.0 TP Depth 1.9
	2					Pull #2 START 7:42 Loss 0.0 End 8:02 Unacc 0.0 Time 20 TI Depth 4.1
487.9	3				3.0 / 2	Drl 20 Ran 1.1 / 2.1 Rec 1.1 TP Depth 3.1
	4		JCL. r. br., s to ve s, occ nct. w/gr & gn CL. occ gn gr CLS frags. H. gr.@ 487.4 to 487.1 sev bkn 489.8 to 489.4 w/ poss loss 0.3, 489.0 to 487.4			Pull #3 START 8:23 Loss 0.1 End 8:45 unacc 0.1 Time 22 Drl 22 Ran 1.7 / 2.0 TP Depth 5.7
	5					
	6				6.3	Rec 1.6 TI Depth 6.1
	7		SLS gr. to gn gr., s to med hd., gradation w/sh. @ top to sa @ bottom, occ slk.			Pull #4 START 9:08 End 9:32 Time 24 Drl 24 Ran 3.4 Rec 3.5 Loss 0 unacc 0
	8				3	
	9		sev bkn 487.4 to 485.2 poss. mech. H. bkn, sh., scam w/slk @ 482.2 sa blow. 479.6			TP Depth 9.5 TI Depth 9.5
	10				9.8	Pull #5 START 9:49 End 10:00 Time 19 Drl 19 Ran 3.5 Rec 3.4 Loss unacc
	11		H. bkn. @ 480.5		4	
	12					TP 11.9
	13				13.1	TI Depth 13.0 Pull #6 START 10:26 End 10:34 Time 8 Drl 8
	14					Ran 3.8 / 5.1 Rec 4.9
	15				5	Loss 0.0 unacc 0.0 TP Depth 15.7
	16				16.5	
	17					
473.9	18				6	TI Depth 18.1 Pull #7 START 10:51 Rec 4.9 End 11:02 Loss 6.6 Time 11 unacc 0 Drl 11 Ran 5.2
	19					

PROJECT Gallipolis Lock & Dam HOLE NO. R 272

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21				4	TP Depth 20.9
	22					Tl Depth 22.9
	23		SS gr. to lt gr., med hd.,		23.5	Pull # 8 START 11:18 End 11:30
	24		med. to f. g, occ mic, grad. c w/ depth, occ			Time 12 Drl 12 Ran #3.3 3.3 TP Depth 24.2
	25		x bdd - sev. mec. bkn 468.8 - 468.5 li mech. bkn @ 464.6		8	Rec 3.5 Loss 0 unacc 0
	26					Tl Depth 26.4 Pull #9
	27				26.9	START 12.30 TP Depth 26.9 end 12.55 Time 5 Drl 5
	28				9	Ran #0.8 1.1 Rec 1.0 Loss 0 unacc 0
	29					Pull # 10 START 12.56 End 1.02 Time 12 Drl 12
461	30					Ran #4.5 4.3
460.3			Bottom Hole		30.6	Rec 4.3 TP Depth 30.6 Loss 0 unacc 0
	31					Tl Depth 31.7
	32					
	33					
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					

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DRILLING LOG	DIVISION ORD		CRD-CD		OF 4 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) monolith R/75 /sta 7+10A

3. DRILLING AGENCY W. G. Jaques. Co.

4. HOLE NO. (As shown on drawing title and file number) R-75-1

5. NAME OF DRILLER Steve Fry,

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 - 497.0

8. DEPTH DRILLED INTO ROCK 33.4

9. TOTAL DEPTH OF HOLE 463.6

10. SIZE AND TYPE OF BIT 4" x 5 ½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A — **DISTURBED** N/A — **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER Na

16. DATE HOLE STARTED 9-11-89 COMPLETED 9-11-89

17. ELEVATION TOP OF HOLE 497.0

18. TOTAL CORE RECOVERY FOR BORING 33.4 %

19. SIGNATURE OF INSPECTOR DET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0	0		CLS/SLS inter bdd: m.-clk.gr., 3-m.hd.: v.bkn 0.8.-27 w/0.9.LC. (mech): S.cl. 3.2.-3.7: overcoved 4.0-4.3: chsely spaced cl co2, hor. (shy) ptgs. 5.6.-7.0. w/0.4 LC. & 7.9 12.2:			Pull #1
	1					Start.-10:32 End - 10:44 Time - 12 Drl - 12 Ran - 4.0 Rec. 3.1 Loss. 0.9 unacc o
	2					
	3				1	
	4				4.0	TI Depth 4.0 TP Depth 4.0
	5				2	Full #2 start 10:49 End. 10.44 Time 12 Drl 12 Run. 4.0 REC 3.5 LOSS 0.9 unacc t
	6					
	7					
	8				7.9	T Depth 7.9 Depth 8.0
	9				3	Full #3 Start- 11:09 Stop 11.19 Time 10 Drl 10
	10		cont.			

PROJECT Gallipolis Lock & Dam) **HOLE NO.** R-75-1

| | | | | | | SHEET 2. OF 4 SHEETS |

PROJECT: Gallipolis Lock & Dam
INSTALLATION: ORD - CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10					
	11				3	Ran - 5.3 Rec 5.2 Loss 0.9 unacc ⊘
					11.6	
	12					
484.8			SLS. cly., m.dk.gr., s.m.h. hor. cly. ptg. @ 12.7: cly 12.7-13.1; shy ptgs. @ 13.4, 13.5, & 13.6			
	13				4	TP Depth 13.1 TI Depth 13.3
483.8						Pull #4 START. 11.36 End. 11.46 Time 10 Drl 10 RAN. 4.2 Rec. 3.7 LOSS. 0.6 unacc
	14.		SS., v. sly., f.g, m.h., m.gr.: hor. ptg. @ 14.3: over cored 14.3-14.5 grading			
	15				15.1	
481.2	16					
	17				5	TP Depth 17.4 TI Depth 17.5
	18					Pull #5 START 12.36 End 12.45 Time 9 Drl 9 RAN 5.0 Rec. 4.8 LOSS 0.1 unacc ⊘
	19				19.2	
	20					
	21				6	
	22		(cont			

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			PROJECT Gallipolis Lock & Dam **INSTALLATION** ORD - CD			**SHEET** 3 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
474.9	22		Cls/lnc transition: s., m.-dk. gr.-r.br., slk. ve.bkn w/slk. plns 22.3.-22.8 grading		22.8	TP Depth 22.3 TD Depth 22.5
	23					Pull #6 START 12.56 End. 12.59 Time 3 Drl ‾
	24				7	Ran. 2.4 Rec. 3.0 Loss 0 Unacc 0
472.6						
	25		Inc., s., r.bkn. bkn., slks			TP Depth 24.9 TD Depth 25.3 Pull #7 START 1:10 End 1:30 Time 20 Drl
	26				26.5	Ran. 4.5 Rec. 4.5 LOSS 0 unacc 0
	27					
	28				8	
	29					
	30				30.2	TP Depth 29.4 TD Depth 29.8 Pull #8 START 1:40 End. 1:52 Time 12
	31				9	Dlr 12 Ran. 5.0 Rec. 3.6 LOSS -0 unacc
	32					
	33					
463.6					33.4	TP Depth 33.4

PROJECT Gallipolis Lock & Dam				INSTALLATION ORD - CD			SHEET 4 OF 4 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	34					DI Depth. 34.4	

DRILLING LOG	DIVISION ORH	INSTALLATION ORH.CD — OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4" × 5¼"

2. LOCATION (Coordinates or Station) mono R.175/2 Sta. 7+45 A.

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W.G. Joques

12. MANUFACTURER'S DESIGNATION OF DRILL B 53 - mobile

4. HOLE NO. (As shown on drawing title and file number) R-75/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

5. NAME OF DRILLER Steve Fry

14. TOTAL NUMBER CORE BOXES 9

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9/14/89 COMPLETED 9/14/89

7. THICKNESS OF OVERBURDEN 497.4

17. ELEVATION TOP OF HOLE 497.4

8. DEPTH DRILLED INTO ROCK 33.4

18. TOTAL CORE RECOVERY FOR BORING 33.4 %

9. TOTAL DEPTH OF HOLE 464.0

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.4	0		CL/sh s, m.d.K.gr. BKN CL. cop w/occ. CL/sh Lens: 2.0-3.1 Loss .4			Pull 1#
						STArt 8:08
						End 8:16
	1					Time .8
						Drl 8
						Rm 4.9
						REC 4.5
	2				1	Loss. 0.5
						unacc -0-
	3					
					3.8	
	4					
492.3	5					TP. cpth. 4.9 / TI Depth 5.0
			ss shy ni.h. m.gr. w/shy			
					2	Pull #2
	6					START 8.23
						End 8:30
						Time 7
	7					Drl 7
490.1						Rm - 5.0 REC 3.2
			CL/sh s.m.dK.gr w/occ. CL. coh. sh. 8.8- 9.6 Loss 1.1 siltstone Len. 14.0 14.6 CLy 14.9 + 15.2 SLK		7,8	Loss - 0 unacc 4
	8					TE Depth 8.0
	9				3	
	10		Cont.			TI Depth 9.9

PROJECT Gallipolis Lock & Dam   HOLE NO. R-75-2

PROJECT: Gallipolis Lock & Dam   INSTALLATION: ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10					Pull #3
						Start 8:41
						End 8:46
	11				11.3	Time 5
						Drl 5
						Ran 2.5
						REC 3.6
						Loss 1.1
						unacc 4
	12					
						TP Depth 12.4
	13				4	TI Depth 12.9
						Pull #4
						Start 9:04
						End 9:10
						Time 6
	14					Drl 6
						Run 2.6
						Rec 2.7
						Loss 6
						unacc 0
482.2	15					TP Depth 14.9
						TI Depth 15.0
			ES. V. SLT. m.gr. okn. 15.9-16.5		15.6	Pull #5
						Start 9.22
	16					End 9.31
						Time 9
480.9						Drl 9
			CL. sh. inter-bed s. m.d.k. gr. SL. Lew 18.8 - 19.8			Ran 5.9
	17					REC 5.2
						Loss .0
					5	unacc 0
	18					
	19				19.4	
	20					TP Depth 20.1
	21				6	TI Depth 20.9
						Pull
						Start 9.50
						End 9:57
						Time 7
	22		Cont			

						SHEET 3 OF 3 SHEETS
PROJECT Gallipolis Lock & Dam				INSTALLATION ORH -CD		
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Pull #6 cont
						Drl. 7
47.44	23				23.0	Ran 2.6
						REC 4.6
			CL/Icl Trans s. gr-r br.			LOSS ⊖
						unacc ⊖
						TP Depth 23.5
	24					TI Depth 24.1
					7	Pull #7
						START 10.06
	25					End 10:13
						Time 7
						Drl 7
						Ran 4.3
						REC. 4.1
471.8						LOSS ⊖
	26		Icl s r.br. slk			unacc ⊖
					26.6	
	27					
	28					TL Depth 27.8
					8	
						TI Depth 28.7
	29					Pull #8
						START - 10:24
						End - 10:38
						Time 14
	30				30.2	Drl 14
						Run 6.1
						REC. 4.7
	31					LOSS ⊖
						unacc ⊖
	32				9	
	33					
464.0			Bottom Hole			TD Depth 33.4
						TI Depth 33.9

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 of 3 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4" x 5½"
2. LOCATION (Coordinates or Station) MONO R-76 1STA. 7+55 "A"	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B 53 Mobile
4. HOLE NO. (As shown on drawing title and file number) R-76/1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A
5. NAME OF DRILLER Steve Frye	14. TOTAL NUMBER CORE BOXES 9
	15. ELEVATION GROUND WATER 0 - 497.2
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	16. DATE HOLE STARTED 9-11-89 COMPLETED 9-12-89
	17. ELEVATION TOP OF HOLE 497.2
7. THICKNESS OF OVERBURDEN 0	18. TOTAL CORE RECOVERY FOR BORING 33.2 %
8. DEPTH DRILLED INTO ROCK 497.2	19. SIGNATURE OF INSPECTOR ET
9. TOTAL DEPTH OF HOLE 33.2	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			ClSH S. m. dk. gr, bkn gr bkn cl. coz. w/occ cly. sls. lens: SLS. 2.6 -36		1	Pull #1 start- 2.08 End 2.20 Time 12 Drl 12 Ran 4.9 Rec 4.7 Loss 0 Unacc 0
					3.8	
					2	TP Depth 4.7 TI Depth 4.9
492.2	5		SS: sly fig., m.h., mgr. w/sly. lam. & incls			Pull #2 Start 2.25 End 2.36 Time 11 Drl 11 Ran 5.0 Rec 4.9 Loss 0 Unacc 0
					7.3	
490.8			ClSH., S., m. dk. gr. br w/fr gr. cl. coz/fra. sly 9.6 - 10.4: h.rg cl fla bdd. Plns 11.5 - 13.4.		3	
						TP Depth 9.6 TI Depth 9.9

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam   HOLE NO. R-76/1

						SHEET 2 OF 9 SHEETS

PROJECT: Gallipolis Lock & Dam
INSTALLATION: ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		CL/Sh			Pull #3
	11				10.8	start 2:42
						End 2:58
						Time - 16
						Drl 16
						RAn 4.5
						REC 4.6
	12					Loss 0
						unacc 0
					4	
	13					
483.5						
	14		SS. ve. shy., fig, ni. h. m.-dk. gr., c/ fld Ptgs @ 16.2,-16.4, 16.7		14.2	TP Depth 14.2
						TI Depth 14.4
						Pull #4
						Date. 9.12.89
	15					START 7:30
						End 7:41
						Time 11
						Drl 11
						RAn. 4.4
	16				5	REC 4.3
						Loss 0.2
						unacc 0
	17					
480.2						
	18		CLS/SLS. inter bdd, 2, m. dk. gr., bkn 17.5 17.9 w/ 0.2 LC., Closley spaced hor. ptgs. 18.7 grading more clayey w/depth		18.0	
						TP Depth 18.7
	19					TI Depth 18.8
						Pull #5
						START 7:43
						End 8:??
	20					Time 11
						Drl 11
					6	RAn 5.1
						Rec 5.2
	21					Loss 0
						unacc 0
					21.5	
	22		(CONT)			

ENG FORM 1836-A
JUN 67

GPO 1969 OF—329-243

PROJECT: Gallipolis Lock & Dam
HOLE NO: K-76/1

| PROJECT Gallipolis Lock & Dam | | | | INSTALLATION ORH-CD | | | SHEET 3 OF 3 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		CLS/SLS			
	23				7	
	24					TI & TP Depth 23.9
	25				25.1	Pull # 6 START - 8:11 End - 8:19 Time .8 Drl 8 Ran 3.7 Rec 3.8 Loss 0 Unacc 0
471.2	26		±cL., r.b.r., S., SlK.			
	27				8	
	28				28.7	Pull # 7 START - 8:24 End 8:32 Time 8 Drl 8 Ran 5.0 Rec 5.0 Loss 0 Unacc 0
	29					
	30				9	TP Depth 30.6
	31					
	32				32.5	TI Depth 32.7
	33				10	Pull # 8 Start - 8:40 Ran — End - 8:47 Rec 0.8 Time - 7 Loss 0 Drl 7 unacc 0
463.7			Bottom Hole		33.5	TI & TP Depth 33.5

DRILLING LOG	DIVISION ORD	INSTALLATION OPH-CD	OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4" X 5½"
2. LOCATION (Coordinates or Station) MONO P-76 / STA 7+91-A	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W.G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-MOBILE
4. HOLE NO. (As shown on drawing title and file number) R-76/2	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRYE	14. TOTAL NUMBER CORE BOXES 10
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE — STARTED 9-14-89 — COMPLETED 9-14 89
7. THICKNESS OF OVERBURDEN α 497.2	17. ELEVATION TOP OF HOLE 497.2
8. DEPTH DRILLED INTO ROCK 34.5	18. TOTAL CORE RECOVERY FOR BORING 34.5 %
9. TOTAL DEPTH OF HOLE 462.7	19. SIGNATURE OF INSPECTOR ET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
497.2	0		ClSH, s, m. dk. gr.. w/hvy cl. s.			Pull #1
	1					START 11:02
						END 11:10
						TIME 8 min
					1	DRL 8 min
	2					PAN 5.2
						REC 5.1
						LOSS 0.1
	3					UNACC 0.1
493.6	4		SS., sly., frg., m.h. m. gr.		37	
493.6			CLS., S., m. dk gr.			
493.2			SS. sly, fig., m.h., m. gr			
492.7	5					DrPS.2 T/DrPS.1
			CLS-S., m. dk. gr., okn. uleng hor. pl. w/ hvy gr cl cos/thl 5.6-12.3 w/c.d h.C. blwn 5.6 & 8.8: s/s 6n: 9.7-10.6		2	Pull #2
	6					START 11:19
						END 11:27
						TIME 8 min
						DrL 8 min
	7					PAN 3.7
						REC 3.3
					7.8	LOSS 0.4
	8					UNACC 0.9
	9				3	DrP 8.9 T/DrP8.8
						Pull #3
	10		(CONT)	(CONT)		(CONT)

| | | | | | | SHEET 2 OF 3 SHEETS |

PROJECT GALLIPOLIS LOCK & DAM   **INSTALLATION** ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		CLS			PULL#3
						START 11:34
					10.8	END 11:96
	11					TIME 12min
						DRL 12min
						RAN 9.5
						REC 9.0
	12					LOSS 0
484.9						UNACC 0
			SLS, s., sm.hd., m, dk gr		4	
484.4						T/DCD 12.8
	13		CLS, sm.-dk.gr.			
484						DCP 13.9
						PULL#4
	14				14.2	START 12:39
						END 12:96
						TIME 7 min
						DRL 7 min
482.2	15					RAN 5.1
			SLS/CLS, interbdd., S -m.h.			REC 5.6
	1		m., dk., gr tr -hvy.gr			LOSS 0.2
			c/. cos. along hor. bdd			UNACC 0.2
	16		plns ve bkn 16.0-18.0		5	
			w/ 0.2 LC			
	17					
	18				18.0	TD CP 18.0
						DCP 18.5
	19					PULL#5
						START 1:00
						END 1:10
					6	TIME 10min
						DRL 10min
	20					RAN 9.5
						REC 3.2
					20.5	LOSS 0
						UNACC 0
	21					T/DCP 21.0
					7	
			(CONT)			

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

PROJECT: Gallipolis Lock & Dam   **INSTALLATION:** ORH-CD   **SHEET** 3 **OF** 3 **SHEETS**

ELEVATION	DEPTH	LEGEND	CLASSIFICATION	% CORE	BOX/SAMPLE	REMARKS
	22		Trars clS/Jcc. S., slk, gr-r-hr			PULL#5
	23				7	DCP 23.0
						PULL#6
						START 1:19
						END 1:25
	24					TIME 6min
472.9						DRL 6min
			Icl. rbr., s., bkn, slk			RAN 2.9
	25					REC 3.1
						LOSS ∅
					25.6	UNACC ∅
	26					DCP 25.9
						PULL#7
						START 1:35
	27				8	END 1:42
						TIME 7min
						DRL 7min
						RAN 4.0
	28					REC 5.2
						LOSS ∅
					28.7	UNACC ∅
	29					7/DCP 29.0
	30					DCP 29.5
						PULL#8
						START 1:59
	31				9	END 2:10
						TIME 11min
						DRL 11min
						RAN 4.6
	32					REC 4.0
						LOSS ∅
					32.5	UNACC ∅
	33				10	
463.7			Bottom Hole		33.5	7/DCP 33.5
						DCP 39.5

DRILLING LOG	ORD		ORH-CD		OF 3 SHEETS

1. PROJECT
Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station)
mono R-77 /STA 7+101-'A

3. DRILLING AGENCY
W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-77/1

5. NAME OF DRILLER STEVE Frye

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN O - 496.9

8. DEPTH DRILLED INTO ROCK 32.9

9. TOTAL DEPTH OF HOLE 464

10. SIZE AND TYPE OF BIT 4 X 5⅝"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER OO 496.9

16. DATE HOLE STARTED 9-12-89 COMPLETED 9/12/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 32.9 %

19. SIGNATURE OF INSPECTOR JeT

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			CLSH., S., m.-dk gr.: oc. sly., hvy. gr. cl. coa in bkn & closely spaced hor ptgs: 0.2.5a lam. 3.8-40. sly. 4.0-55: 0.2. LC. blwn s. 5 -8.4		1	Pull #1 START - 9.20 END 9:29 TIME 9 Drl 9 RAN 4.9 REC 4.5 LOSS 0 unacc 0
	1					
	2					
	3				3.7	
	4					TP Depth 4.5
	5				2	TI Depth 4.9 Pull #2 START 9.36 End 9.45 TIME 9 Drl 9 RAN 3.7 REC 3.7 LOSS .02 unacc 0
	6					
	7				7.3	
	8				3	TP Depth 8.4 TI Depth 8.5
48.7.7	9					
	10		SS, sly. f.g., m.h., m.gr.: bkn, sl, 9.8 -10.2 (cont)		(cont)	(cont)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam   HOLE NO. R-77/1

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

486.7 / 10

			CLS/SLS inter bdd., s., m.h., m.dk.gr: ve bkn 10.2÷11.2 #12-13.4: 0.4 LC 13.4-13.8		3	Pull #3
	11				11.1	START - 9:52
						End 10:00
						Time 8
						Drl 8
						RAN 5.3
	12					REC 5.0
						Loss 0
						unacc 0
					4	
	13					
						TO Depth 13.9
						TI Depth 13.9
482.9	14		SS. sly. f.g., m.h., m.gr: hor. ptg. w/tr.gr.CL cub @ 14.4: ha,o., sli.slk.t. 14.5 - 15.1 grading into SLS. w/depth			Pull #4
						START - 10.12
					14.4	End - 10.23
	15					Time 11
						Drl 11
						Ran 7.00 ①
						REC 2.3
480.8	16					Loss 0
			SLS. sl. sa. to 18.0; m.gr, m.hd. occ closely spacd hor.ply w/tr. cl. cub. grading w/depth		5	unacc 0
						TO Depth 16.1
	17					
	18				18.0	TI Depth 20.9 ?
						Pull #5
						START 10:30
						End 10 40
	19					Time 10
						Drl 10
						Ran 0.1 ①
					6	Rec 4.1
	20					Loss 0
						unacc 0
						TO Depth 20.2
475.9	21					TI Depth 21.0
			CLS. s. un.dk.gr. closely spaced hor. ptgs			
					21.7	
	22				7	

ENG FORM 1836-A JUN 67

GPO 1969 OF-329-243

PROJECT: GALLipolis Lock & DAm   HOLE NO. R-77/2

PROJECT *Gallipolis Lock & Dam*   INSTALLATION *ORH-CD*

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	22		CLS		7	Pull # 6 START 10:48 End 11.00 Time 12 Drl 12 Ran 9.9 Rec 4.7 Loss 0 unacc 0
474.1	23		Trans CLS/ICL			
	24					
471.9	25		ICL., rbr, bkm, slk, S		25.3	Ti & TP Depth 24.9 Pull #7 START 11.13 End 11.25 Time 12 Drl 12 RAN 3.3 Rec 4.7 LOSS 0 unacc 0
	26				8	
	27					
	28					TP Depth 28.2 FOR Pull 8
	29				29.1	
	30				9	Ti Depth 29.6 Pull # 8 START 12.20 End 12.34 TIME 14 Drl 14 RAN 5.7 REC 3.3 Loss 0 unacc 0
	31					
	32					
464.0	33		Bottom Hole		32.9	TD Depth 32.9
					33.9	TL Depth 33.9

DRILLING LOG

DIVISION	**INSTALLATION**	**SHEET 1 OF 4 SHEETS**
ORD	ORH-CD	

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MOND - R-77 / STA 6 + 10 'R'

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R 77/2

5. NAME OF DRILLER Steve Frye

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 497.7

8. DEPTH DRILLED INTO ROCK 35.9

9. TOTAL DEPTH OF HOLE 461.8

10. SIZE AND TYPE OF BIT 4" x 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER 00 - 496.7

16. DATE HOLE STARTED 9-14-89 COMPLETED 9-15-89

17. ELEVATION TOP OF HOLE 0 497.7

18. TOTAL CORE RECOVERY FOR BORING 34.2 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7	0		CLS-S. dk.gr., shy., occ. shy ve.s 0.0-4.5: 0.2' ss incl @ 2.8. -2.2. ve.s. 2.8- 4.5 w/0.4 LC. ve.bk.⊓ w/hvy .gr. cl. coa. 4.9-7.7 s., 7.7-9.7: shy., s 9.7 - w/s., m.gr. cl. coa./fld. SLS len @ 12.2-12.6 ¢ 13.5-13.7. shy ss len 14.3-14.6 sl. sly 15.9-17.1 w/m.ry dk. gr fld @ 16.3.¢16.5, 16.7.¢16.9 -17.0 ve bk⊓.,S w/cl. ccd 17.1-18.7 bkn, sly. 18.7-19.5 ves., bk⊓. 20.5-21.7: sly. 21.7 -22.5 ve bk⊓ 22.5-26.9		1 3.7	Pull #1 START 2.26 End 2.33 TIME 7 Drl 7 Ran 4.9 REC 4.1 LOSS .04 unacc 0
	1					
	2					
	3					
	4					TiDepth 4.5 TFDepth 4.9
	5				2	Pull #2 START 2.51 End 3.00 TIME 9 Drl 9 Ran 5.0 REC 5.2 LOSS 0 unacc 0
	6					
	7				7.7	
	8				3	
	9					
	10		(CONT)		(CONT)	TiDepth 9.7 TFDepth 9.9

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT	HOLE NO.
Gallipolis Lock & Dam	R-77/2

PROJECT Gallipolis Lock & Dam | INSTALLATION ORH-CD | SHEET 2 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		cont. CLS-			Pull #3 START 7.35 End 7.45 TIME 10 Drl 10
	11				11.1	Ran 2.9 REC 3.3 LOSS 0 unacc 0
	12					
	13				4	Tl Depth 12.8 ? TP Depth 13.0 Pull # 4 START 7.56 End 8.65 TIME 9 Drl 9
	14				14.7	Ran 3.1 REC 5.1 LOSS 0 unacc 0
	15					
	16				5	Tl Depth 15.9 ?
	17					
	18				18.1	TP Depth 18.1 Pull #5 START 8.17 End 8.33 TIME 16 Drl 16
	19				6	Ran 5.9? REC 3.6 LOSS 0 unacc 0
	20				21.7	
	21				7	Tl Depth 21.7 TP Depth 21.8
	22		(CONT)		(CON¹)	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g

PROJECT GALLIPOLIS LOCK & DAM   **INSTALLATION** ORH-CD   SHEET 4 of 4 SHEETS

Depth markings 22 through 34.

Remarks column:

Pull #6

START	8:50
End	8:59
TIME	9
Drl	9
Ran	4.3
REC	5.2
LOSS	θ
unacc	θ

Box 7

25.5

Tl Depth 26.1 ?

TP Depth 26.9

Pull #7

START	9:10
End	9:17
TIME	7
Drl	7
Ran	6.0 ?
REC	5.2
LOSS	θ
unacc	θ

Box 8

28.9

Box 9

32.1   Tl Depth 32.1

TP Depth 32.4

Pull #8

START	9.24
End	9.30
TIME	6
Drl	6
Ran	3.5
Rec	2.1
LOSS	θ
unacc	θ

Box 10

34   (Cont)   (CONT)

	ELEVATION TOP OF HOLE	497.7			Hole No.	R-77/2

PROJECT GALLipolis Lock & Dam **INSTALLATION** ORH-CD

SHEET 4 OF 4 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
462.5	34		ICL., s.,r.br. slt, bkn			
						TI Depth 34.2
	35					
						TP Depth 35.9

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	DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mond R-78 /STA 8+47 A

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-78/1

5. NAME OF DRILLER Steve Frye

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 00 (496.7

8. DEPTH DRILLED INTO ROCK 4

9. TOTAL DEPTH OF HOLE 32.6

10. SIZE AND TYPE OF BIT 4" X 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9-12-88 | COMPLETED 9-13-88

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING 32.6 %

19. SIGNATURE OF INSPECTOR ET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SLS/CLS - inter bdd., s., m.-dk. gr. occ. Shy., bkn. throughout w/cl. CO2 & s. cl. zos. (max. core 0.2) overcoring 9.3-10.0' CLS. 10.0-13.0. SLS - 13.0-13.3: Ve. s. 13.3-13.8 w/ 0.4 L.C. (Prob mech)		1	Pull #1 START 1.31 End 1.44 Time 13 Drl 13 Ran 5.0 Rec 4.1 LOSS Unacc
					3.8	TI Depth 4.1
					2	TP Depth 5.0 Pull #2 START 1.55 End 2.10 Time 15 Drl 15 Ran 4.9 Rec 5.2 LOSS Unacc over Drl.
					7.5	
					3	TI Depth 9.3 TP Depth 9.9

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam | HOLE NO. R-78/1

| | | | | | | SHEET 2 OF 3 SHEETS |

PROJECT Gallipolis Lock & Dam **INSTALLATION** ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10				3	Pull #3
						START 2.20
					10.8	End 2.25
	11					Time 5
						Drl 5
						Ran 4.0
						REC 4.1
	12					LOSS 0.4
						unacc
	13				4	
482.9						TI Depth 13.8
	14		SLS., cly srmihy m.-dk.gr: O, hor conta			TP Depth 13.9
482.5						Pull #4
			SS., ve.Sly, v.f.g., mh., m. gr. w/occ thin dk.gr.sly. lam. & incl. grading w/depth		14.6	START 2.40
	15					End 3.00
						TIME 20
						Drl 20
						RAN 5.0
481.1						REC 3.8
	16		CLSH, Sly., m,dk.gr., S., w/s gr.cl co2 & fld. bdd. plns., b furn 16.2 & 18.1 w/ 0.5' LC		5	LOSS 0.5
						unacc
	17					
478.6	18				18.1	TI Depth 18.9
			SS., m.g. mh.-hd., mic. (Spun contact)			
477.8						Tp Depth 18.1
	19		CLS, S., m.-dk.gr., w/occ sly lens sly. w/dk.gr coa & fld. bdd plns.			Pull #5
						START 7:35
					6	END 7:41
	20					TIME 6
						Drl 6
						RAN 3.7
						REC 4.4
	21					LOSS
						unacc
	22				21.9	

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| PROJECT GALLIPOLIS LOCK & DAM | | INSTALLATION ORH-LD | | | | | SHEET 3 of 3 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22					
474.4			CLS/ICL., s., dk gr. r. br., slk TRANS, zone			TI Depth 22.5 T.P Depth 22.6 Pull # 6
	23		ICL. s., r. br., slk., ve. bkn		7	START 8.00 End 8.11 TIME 11 Drl 11 Ran 4.9 REC 4.9 Loss unacc
	24					
	25				25.5	
	26					
	27				8	TI Depth 27.4? TP Depth 27.5 Pull #7
	28					START 8.14 End 8.20 TIME 6 Drl 6 Ran 5.2
	29				29.1	REC 5.2 Loss unacc
	30				9	
	31					
	32					
464.1			Bottom Hole		32.6	TI Depth 32.6 TP Depth 32.7

DRILLING LOG

Field	Value	Field	Value
DIVISION	ORD	INSTALLATION	ORH-CD
1. PROJECT	Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT	4" X 5½"
2. LOCATION (Coordinates or Station)	Mono R-78 /STA 9+33 A	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	M.S.L.
3. DRILLING AGENCY	W. G. Jaoues	12. MANUFACTURER'S DESIGNATION OF DRILL	B-53 Mobile
4. HOLE NO.	R-78/2	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A / UNDISTURBED N/A	
5. NAME OF DRILLER	STEVE FRYE	14. TOTAL NUMBER CORE BOXES	9
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.		15. ELEVATION GROUND WATER	00 - 496.7
		16. DATE HOLE — STARTED 9-20-89 / COMPLETED 9-20-89	
7. THICKNESS OF OVERBURDEN	496.5	17. ELEVATION TOP OF HOLE	496.5
8. DEPTH DRILLED INTO ROCK	464.0	18. TOTAL CORE RECOVERY FOR BORING	32.5 %
9. TOTAL DEPTH OF HOLE	32.5	19. SIGNATURE OF INSPECTOR	JeT

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5	10		CLSh., S., m. dk. gr.			Pull #1 START 9.00 End 9.10 Time 10 Drl 10 Ran 3.3 REC 2.0 Loss 1.3 Unacc 0
495.7	1		SLS, cly., s,-m.h., m.-dk.gr. max (0.4)			
494.7	2		CLSH, s.-m.-dk.gr., bkn occ w/o .7 LC. btwn. 2.2.& 3.8' sly. len. 4.7-50 closely spaced & hor plys w/tr hvy dk.gr. cos /s/d 5.0 - e.H w/1.1.LC.		1	
	3					TI & TD Depth 3.3 Pull # 2
					3.8	STARTE 9.25 End 9.36 TIME 11 Drl 11 Ran 5.6 REC 4.1 Loss 0.1 Unacc 0
	4					
	5					
	6				2	
	7					TI Depth 7.3
	8					
					8.4	
	9				3	TD Depth 8.9 Pull # 3 START 9:46 End 9:55 Time 9 Drl 9 Ran 3.2
	10		(cont)		(cont)	

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE	4966			Hole No. R78/2	
PROJECT Gallipolis Lock & Dam			INSTALLATION ORH-CD			SHEET 2 OR 3 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS
	10					Rec 4.5
						LOSS 0
					3	unacc 0
	11					
						TI Depth 11.8
	12				12.2	TP-Depth 12.1
						Pull # 4
						START 10:02
						End 10:08
	13					Time 6
						Drl 6
						Ran 5.00
						REC 4.1
483.2	14		S.S., sly, frg, m.h., m.dk. gr. bkn 14.0-14.4: hvy.gr.cl. coa., irr.ptg @ 14.6 & 15.5		4	LOSS 0
						unacc 0
	15					
481.6						
	16		CLS. sly m-dk.gr., S.ve bkn. 5, -15.6 - ve.bkn along vent. face. 15.8 - 17.0		159	TI Depth 15.9
480.2	17		CLSH, dr.gr.,s.w/fr.cl. 002. on hor. bdd plns		5	TP Depth 17.1 Pull # 5
	18					START 10:20 End 10:30 Time 10 Drl 10 R.Ran 5.0 REC 4.1 LOSS 0
	19				18.8	unacc 0
	20					TI & TP Depth 19.7 Pull # 6
476.7					6	START 10.41 End 10.48 Time 7
	21		CLSH			Drl 7 Ran 4.0 REC 4.0 LOSS 0
	22		(Con't)		(Con't)	unacc 0

DRILLING LOG (Cont Sheet)

		ELEVATION TOP OF HOLE	Hole No.	
		4965	R78/2	

PROJECT			INSTALLATION			SHEET 3
Gallipolis Lock & Dam			ORH-CD			OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		CLSH/ICL., dk.gr.-r.br., s.slt 0.3 l.C. h.tun 19.9 & 23.4 hry cl. cld bdd. plns Trans		22.6	
	23					
473.8						TI Depth 23.6 TP Depth 23.7
			ICL. S. ve bkn., r.br. slk			Pull # 7
	24				7	START 10:57 End 11:05 TIME 8 Drl 8 RAN 4.6 REC 4.8 LOSS .0 unacc 0
	25					
	26				26.4	
	27					
	28				8	TI Depth 28.3 TP Depth 28.5 Pull # 8
	29					START 11.12 End 11:28 TIME 16 Drl 16 RAN 5.2
	30				30.0	REC 5.0 LOSS 0 unacc 0
	31				9	
	32					
	33					
463.8			bottom Hole		33.4	TI & TP Depth 33.5

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PROJECT	HOLE NO
Gallipolis Lock & Dam	R-78/2

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DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 4 SHEETS

1. PROJECT Gallipolis Locks & Dam

2. LOCATION (Coordinates or Station) Mono R-79 / STA 8+99 "A"

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-79/1

5. NAME OF DRILLER Steve Frye

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 496.8

8. DEPTH DRILLED INTO ROCK 32.8

9. TOTAL DEPTH OF HOLE 5

10. SIZE AND TYPE OF BIT 4 1/5 1/2

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9-20-89 COMPLETED 9-21-89

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 32.8 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			Interbdd CLS/SLS, m.dk. gr., occ. shy, s. m.h.: VelbKn. 0.0-2.9: 4.4-5.2; hvy cl. CO2 along near hor. ptgs starting @ 5.2		1	Pull #1 START 12.14 End 12.27 Time 13 Drl 13 Ran 5.2 REC 5.2 Loss 0 Unacc 0
					3.2	
	5				2	TP & TI Depth 5.2 Pull #2 START 12.54 End 1.03 Time 9 Drl 9 Ran 4.5 REC 4.4 Loss 0 unacc 0
					6.9	
488.2					3	
	9		SLS. -Se, m.dk.gr., s.- m.h.; hor. ptg @ 9.0: irr., 0.:t. 9.0-9.5 grading			
487.2					(cont)	TI Depth 9.6 TP Depth 9.7
	10					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam HOLE NO. R-79/1

PROJECT	INSTALLATION		SHEET 2
GALLipolis Locks & DAM	CRH-CD		OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CLSH, s.-m.h., m.-dk gr. w/tr. cl. CO_2 along closely spaced hor. ptgs:	10.5		Pull #3 START 1.10 End 1:17 Time 7 Drl 7 RAN 5.1 REC 5.2 Loss 0 unacc 0
	11					
484.8	12		SLS., s.-m.h., m.-dk.gr grading		4.	
483.8	13		SS. ve sly. f.g., m.h. inter bdd with sly. lam			
482.7	14		SLS. s. m.h., m.dk.gr. occ. cly., clase pts. shy. w/tr cl.CO_2./ fld o.l., L.C. btwn 14.8 & 14.4	14.1		
	15				5	TP&TI Depth 14.8 Pull #4 START 1:32 End 1:41 Time 9 Drl 9 RAN 4.8 REC 4.5 Loss 0.1
	16					
	17					17.7
	18					
	19				6	TI Depth 19.4 TP Depth 19.6 Pull #5 START 1.49 End 2.03 TIME 14 Drl 14 RAN 8.6 REC 10.2 Loss 0 unacc 0
477.4			ICL., s. m.h., m.gr., slk. grading			
	20					
	21			21.3		
474.8	22		(Cont)	(cont)		

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PROJECT	HOLE NO
GALLipolis Locks & DAM	R-79/1

						SHEET 3

PROJECT: GALLIPOLIS LOCK & DAM   INSTALLATION: ORH-CD   OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Icc, r.br., S, m.h., slk., bkm			
	23				7	
	24					
	25				25.1	
	26					
	27				8	
	28					TI DEPth 28.2
	29				28.9	
	30					TP DEPth 29.6
						Pull #6
						START 2:12
						End 2:25
						Time 13
	31				9	Drl 13
						Rmn 4.3
						REC 2.9
						LOSS -0-
	32					Unacc -0-
					32.5	TI & TF DEPth 32.5
						Pull #7
	33					START 7:30
						End 7:38
						Time 8
						Drl 8
						Rmn 3.0
						REC 3.0
						LOSS -0-
	34					unacc -0-

DRILLING LOG (Core Sheet)				ELEVATION TOP OF HOLE 496.8			Hole No. R79/1	
PROJECT GALLIPOLIS LOCK & DAM				INSTALLATION ORH-CD			SHEET OF SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d		% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
			ICL					
	35							
			Bottom Hole				TI & TP Depth 35.5	

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PROJECT GALLIPOLIS LOCKS & DAM HOLE NO R-79/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 9 SHEETS

1. PROJECT Gallipolis Locks & Dam

2. LOCATION (Coordinates or Station) Mono R-79 / STA 9+23 "A"

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-79/2

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.5

8. DEPTH DRILLED INTO ROCK 464.0

9. TOTAL DEPTH OF HOLE 32.9

10. SIZE AND TYPE OF BIT 4" ISB"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9-15-89 COMPLETED 9-19-89

17. ELEVATION TOP OF HOLE 496.5

18. TOTAL CORE RECOVERY FOR BORING 32.9 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5			Interbdd. CLS/SLS, Pts., Shy., s.m.h., m.-dk.gr.: c/ coa/fld close ptg. 1.1 L.C. btwn 0.0-4.6.			Pull #1 START 2.00 End 2:07 Time 7 Drl 7 Ran 4.9 Rec 3.5 Loss 1.1
	1				1	
	2					
	3					
	4					
					4.6	TI Depth 4.9
	5					TP Depth 4.6 Pull #2 START 2.14 End 2:21 Time 7 Drl 7 Ran 4.8 Rec 4.9
	6				2	
	7					
	8					
488.					8.4	
			SLS., -sa, m.h., m.-dk gr.			
	9					
487.1					3	TI. 9.5
			CLSH. s.m.h., m.-dk.gr. Close hrr ptg. w/tr. hvy c/. coa/fld			TP. 9.7
	10					

PROJECT Gallipolis Lock & Dam	HOLE NO. R-79/2

PROJECT: Gallipolis Locks & Dam   INSTALLATION: ORH-CD   SHEET 2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
				1'		**Pull #3** START 2.32 End 2.40 Time 8 Drl 8 Pen 4.2 REC 5.0 Loss 0 Unacc 0
	11				3	
	12				12.1	
483.3	13					
			SS., sly., f.g., m.h., m.gr. w/sly lam. irr psg. along. sly. lam. 13.8 - 14.2			
	14				4	T1 - Depth 13.9
481.9						TP - Depth 14.5
	15		CLSH. occ. sly., shy, S. m.h., m. dk. gr. w/tr. hvy. cl. co2/ fld along hor ptgs. 0.6 L.C. btwn 14.5 & 17.2. ; fault gouge zone 16.8 - 17.2		15.7	**Pull #4** START 8:40 End 8.52 Time 12 Drl 12 Pen 4.4 REC 3.0 Loss 0.6 Unacc 0
	16					
479.2	17					
			SLS., sa., s. m.h. m.gr.		5	
478.3	18					T1 Depth 18.1 TP Depth 18.3
			CLSH, S. m.h., m. dk. gr. sli. sly. to 20.5; ve bkn w/ hvy. cl. com. 20.5 - 23.3			**Pull #5** START - 9.23 End - 9.32 Time 9 Drl 9 Pen - 5.0 REC - 5.2 Loss - 0 Unacc 0
	19				19.7	
	20					
	21				6	
	22					T1 Depth 21.9

| PROJECT | | Gallipolis Locks & Dam | | INSTALLATION | ORH-CD | | | SHEET 3 OF 3 SHEETS | |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d		% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	23						
423.1						23.3	TP Depth 23.3
			ICL, r.br., s. m.h., slk. ve. bkn 27.7 - 33.4				Pull #6
	24						START 9:40
							End 9:49
							TIME 9
							Drl 9
	25					M	Ran 5.2
							REC 5.2
							Loss 0
							unacc 0
	26						
	27					26.7	
	28					8	
							TI & TP Depth 28.5
	29						Pull #7
							START - 10.00
							End 10:12
							TIME 12
							Drl 12
	30						Ran 12
							REC 4.9
							Loss 0
						30.4	Unacc 0
	31						
	32					9	
	33						
463			Bottom Hole			33.4	TI & TP Depth 33.4

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Locks & Dam

2. LOCATION (Coordinates or Station) MONO R-80 STA 9+33 A

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-80/1

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 — 496.5

8. DEPTH DRILLED INTO ROCK 0

9. TOTAL DEPTH OF HOLE 33.5

10. SIZE AND TYPE OF BIT 4" 5⅞"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9-20-89 | COMPLETED

17. ELEVATION TOP OF HOLE 496.5

18. TOTAL CORE RECOVERY FOR BORING %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5			Interbdd CLS/SLS, shy., s. m.h., m.-dk.gr. Ve.bkn w/l.l. LC. btwn 0.0 & 4.6 close near hor ptgs w/hvy Cl. Coal Fld To.8.2 w/0.1 LC. btwn 3.3 & 7.3		1	Pull #1 START - 9:00 End 9:10 TIME 10 Drl 10 Ran 3.3 REC 2.0 LOSS 1.3 undcc 0 TI & TP Depth 3.3
					4.7	Pull #2 START 9.25 End 9.36 Time 11 Drl 11 Ran 3.6 ? REC 4.1 Loss 0.1 undcc 0
					8.1	TI Depth 7.3
488.3			SLS., sa., s.m.h., m) dk.gr.			TP Depth 8.9
487.7			CLSH. s.m.h., m.dk.gr., occ. sly. close ptgs w/hug. Cl coal fld, bky to 11.2			Pull #3

						SHEET 2 of 3 SHEETS
PROJECT GALLIPOLIS LOCK & DAM				INSTALLATION ORH-CD		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Pull #3
						START 9.46
						End 9.55
						Time 9
	11					Drl 9
						Ran 3.2
						Rec 4.5
						Loss ø
						unacc ø
					11.8	TI Depth 11.8
	12					
						TP Depth 12.1
484.1						Pull #4
			SS., sly., fig., m.h., m.gr. ha hld., irr jt. 12.5-13.0: grading sly @ 13.0			START 10.02
483.5	13					End 10.08
			SLS, s.mh., mdk.gr., pts. horr. grading			TIME 6
						Drl 6
						Ran 5.0
						REC 4.1
	14					LOSS ø
						unacc ø
481.5	15					
			CLSH., s.m.h., m.dk.gr., Close ptys w/tr. cl. coa,: 0.3 L.C. btnn 15.9 & 19.7 grading into		15.6	
						TI Depth 15.9
	16					
	17					TP Depth 17.1
						Pull #5
						START 10.20
						End 10.30
						Time 10
	18					Drl 10
						Ran 2.6
						REC 3.5
						LOSS 0.3
	19				19.1	unacc ø
						TI & TP 19.7
	20					Pull #6
						START 10.41
						ENd 10.48
						TIME 7
						Drl 7
	21					RAN 4.0
						REC 4.0
475.						LOSS ø
						unacc ø
	22		Cont.			

						SHEET 3
PROJECT GALLIPOLIS Lock & DAM			INSTALLATION ORH-CD			OF 3 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
			ICL., gr. - r.br., s. m.h., SlK., bkn. becoming r. br. @ 23.7			
					22.9	
	23					Tl Depth 23.6
						TP Depth 23.7
						Pull #7
	24					START 10:57
						End 11:05
						TIME 8
						Drl 8
	25					RAN 4.6
						REC 4.8
						LOSS 0
						UNACC 0
	26					
					26.4	
	27					
	28					Tl Depth 28.3
						TP Depth 28.5
						Pull #8
	29					START 11.12
						End 11.28
						TIME 16
						Drl 16
	30				29.9	RAN 5.2
						REC 5.0
						LOSS 0.
						UNACC 0
	31					
	32					
	93					
463.			Bottom Hole		33.5	Tl & TP Depth 33.5

	DRILLING LOG	DIVISION		INSTALLATION		SHEET 1
		ORD		ORH-CD		OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO R-80 /STA 9+63 A

3. DRILLING AGENCY W. 6. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-80

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0.496.4

8. DEPTH DRILLED INTO ROCK

9. TOTAL DEPTH OF HOLE 333

10. SIZE AND TYPE OF BIT 4" Y Sk

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED n/a | UNDISTURBED n/a

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER n/a

16. DATE HOLE STARTED 9-19-89 COMPLETED 9-19-89

17. ELEVATION TOP OF HOLE 496.4

18. TOTAL CORE RECOVERY FOR BORING 33.3 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			interbdd CLS/SLS - s.m.h., m.-dk.gr. bkn. w/0.7 L.C. btwn. 0.0 & 4.2 ve. bkn 5.2-8.0		1	Pull #1 START 10:58 End 11:06 TIME 8 Drl 8 RAN 4.9 REC 3.5 LOSS 0.7 unacc 4.9
	1					
	2					
	3					
	4				4.2	Tl Depth 4.2
	5					Tp Depth 4.9 Pull #2 START 11:12 End 11:25 TIME 13 Drl 13 RAN 4.2 REC 5.1 LOSS 0
	6				2	
	7					
	8				8.0	
487.9			SLS-Sly.sa., s.m.h., m.g.			
487.6	9		CLSH. s.m.h, m.dk.gr. Close spaced cl. cos.ptqs., grading 0.7.L.C btwn 9.3 - 11.8		3	Tl Depth 9.1 Tp Depth 9.3 Pull #3
	10					

	ELEVATION TOP OF HOLE						Hole No. R-80/2	

ELEVATION TOP OF HOLE **496.9**   Hole No. **R-80/2**

SHEET **2** OF **3** SHEETS

PROJECT: *Gallipolis Lock & Dam*   INSTALLATION: *ORH—CD*

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV-ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	1					Pull # 3
						START 12:25
	11					End 12:33
					3	Time 8
						Drl 8
						Ran 3.7
						REC 2.7
					11.6	Loss 0.7
						unacc 0
484	12					
			SLS, sli. sd., s.m.h., ve bkn 12.7-13.0 grading			
						TI Depth 12.7
						TP Depth 12.8
	13					Pull # 4
						START 12:44
482.9						End 12:56
			CLSH, s.m.h., m.dk.gr., Pts.hor. ve,bkn. 14.8-15.8 & 16.9 -17.9 closely spaced near hor. plqs w/tr.CL. coa/fld starting @ 17.9 grading into			Time 12
	14				4	Drl 12
						Ran 5.1
						REC 5.1
						Loss 0
	15					unacc 0
	16				15.8	
	17					
					5	TI & TP Depth 17.9
	18					Pull # 5
						START 1:07
						End 1:16
	19					Time 9
						Drl 9
					19.4	Ran 4.3
						REC 4.2
						Loss 0
	20					unacc 0
	21				6	
	22					TI Depth 22.1

PROJECT: *Gallipolis Locks & Dam*   HOLE NO *R-80/2*

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						TP. Depth 22.2
						Pull #6
						START 1:27
						End 1:34
	23				23.0	Time 7
						Drl 7
						RAN 4.5
						REC 4.6
472.9	24					Loss 0
			ICL., r.bn., s.m.h., sLk bKn. becoming r.bn @ -23.7		7	
	25					
	26					
					26.7	TI & TP Depth 26.7
	27					Pull #7
						START 1:44
						End 1:58
						Time 14
						Drl 14
	28					RAn 4.9
					8	REC 4.9
						Loss 0
						unacc 0
	29					
	30					
					30.5	
	31					
					9	TI & TP Depth 31.6
						Pull #8
	32					START 2:06
						End 2:14
						Time 8
						Drl 8
						RAN 2.8
						Rec 1.7
	33					Loss 0
462.8			Bottom HoLE		33.3	unacc 0
						TI Depth 33.3
						TP Depth 34.4

DRILLING LOG

DRILLING LOG	**DIVISION** ORD	**INSTALLATION** ORH-CD

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono R-81 / Sta 9+73 A

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-81

5. NAME OF DRILLER Steve Frye

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 – 496.7

8. DEPTH DRILLED INTO ROCK

9. TOTAL DEPTH OF HOLE 32.7

10. SIZE AND TYPE OF BIT 4 Y 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9-21-89 COMPLETED 9-21-89

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING 32.7 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
496.7			Interbdd CLS/SLS. s.m.h., m.gr.-dk.gr, ve.bkn. 0-0.4-0. w/ 0.3. L.C.		1	Pull #1 START 8:23 End 8:35 Time 12 Drl 12 Ran 4.9 REC 4.5 LOSS 0.3 unacc ∅
					3.8	
492.2						Tl Depth 4.8 TP Depth 4.9
	5		ss – sly., f.g. m.h., m.gr., bkn 5.1 – 5.8		2	Pull #2 START 8:53 End 9:02 Time 9 Drl 9 Ran 4.4 REC 4.2 LOSS ∅ unacc ∅
490.9	6		CLS- s.m.h., m.gr. ve bkn. w/hvy cl.fld to 9.8		7.1	
					3	
						Tl Depth 9.3 TP Depth 9.4
486.9	10					

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PROJECT Gallipolis Lock&Dam

HOLE NO. R-811

						SHEET 2 OF 3 SHEETS
PROJECT Gallipolis Locks & Dam				INSTALLATION ORHe CD		

ELEVATION a	DEPTH 10 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
486.3			S.S. sly fig. mb., m.gr. grading			Pull # 3
			CLSH. sm.h., m.dk.gr. huy cl coa/fld along close, hor ptgs		10.8	START 9:20 End 9:30 Time .10 Dri 10 RAN 5.3 REC 3.1 LOSS -0- unacc -0-
	11					
	12				4	
484.2						TI Depth 12.5
	13		S.S., sly, fig., m.h. m.gr. Core Spon 12.5, -13.0 grading into		1	
483.2						
	14		SLS. Cly., s. m.h., m.gr. grading		14.1	
	15				5	TP Depth 14.6 Pull # 4 START - 9:41 End 9:48 TIME 7 Dri 7 RAN 4.3 REC 4.3 LOSS -0- unacc -0- TI Depth 16.8
481.1						
	16		CLSH. s.m.h, m. dk. gr. tr. -huy. cl. coa, close hor ptgs,			
	17				17.1	
	18					
	19				6	TP Depth 18.9 Pull # 5 START 9.55 End 10.07 Time 12 Dri 12 Ran 3.1 REC 5.2 LOSS -0- unacc -0-
	20					
	21				21.4	
	22					TI & TP Depth 22.0

ENG FORM 1836-A JUN 67	GPO 1869 OF—329-242	PROJECT Gallipolis Locks' Dam	HOLE NO R-81/1

						SHEET 3
PROJECT GALLIPOLIS Locks & DAM			INSTALLATION ORH-CD			of 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Pull # 6
474.2						START 10:17
						End 10:25
	23		ICL, r.br., s.m.hd., bkn., SlK			TIME 8
						Drl 8
						Ran 5.0
						REC 4.9
						Loss 0
	24					Unacc 0
	25				25.1	
	26					
	27					TI Depth 26.9
						TP Depth 27.0
						Pull # 7
					27.6	START 10:32
	28					Encl 10:45
						Time 13
						Drl 13
						Ran 5.8
	29					REC 5.9
						Loss 0
						unacc 0
	30					
	31					
	32					
464.3			BoHom Hole		32.4	
						TI & TP Depth 32.8
	33					

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock / Dam

2. LOCATION (Coordinates or Station) MONO R-81 ISTA 10+03 "A"

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-81/2

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 – 496.7

8. DEPTH DRILLED INTO ROCK

9. TOTAL DEPTH OF HOLE 32.7

10. SIZE AND TYPE OF BIT 4 15½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER

16. DATE HOLE STARTED 9-21-89 | COMPLETED

17. ELEVATION TOP OF HOLE 484.0

18. TOTAL CORE RECOVERY FOR BORING 32.7 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
996.7			Interbdd CLS/SLS., m.-dk.gc s.-m.h., shy vr.bkn. 0.0-3.6 w/0.5 v.c. 0.3. Sa. len 4.3-4.6: close hor ptgs. w/tr 1 sld gr. cl. 4.6 -13.0 0.9 v.c. btwn 4.6 & 8.7 Sli. Sa. 9.3-9.8		1	Pull #1 START 12.31 End 12:47 Time 16 Drl 16 Ran 4.9 REC 4.1 Loss 05 unacc ∅
					3.6	
						TI Depth 4.6 TP Depth 4.9
					2	Pull #2 START 1.00 End 1:09 Time 9 Drl 9 Ran 4.9 REC 3.2 Loss 0.9 unacc ∅
					7.6	
					3	TI Depth 8.7
						TP Depth 9.8

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PROJECT Gallipolis locks & Dam

HOLE NO. R-81/2

ELEVATION TOP OF HOLE		Hole No. R 81/2
496.7		

PROJECT	INSTALLATION	SHEET 2 OF 3 SHEETS
GALLIPOLIS LOCK & DAM	ORH-CD	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	11				3	Pull #3 START 1:18 End 1:25 Time 7 Drl 7 Ran 3.7 REC 2.8 Loss 0
					11.5	Unacc 0
	12					
483.7	13					TI Depth 11.5
			SLS. Sa., Cly. s -m.h, m.-dk gr., mass. to 15.9: core spin @ 15.9: 30° SlK ptg @ 16.5:		4	TP Depth 13.5 Pull #4 START 1.35 END 1.47
	14					TIME 12 Drl 12
	15				15.1	Ran 4.4 REC 5.2 Loss 0 Unacc 0
	16					
480.0						TI Depth 16.7
	17		CLS.-sly, s. m.h., m-dk.gr., shy: tr. gr. cl. coa, close ptgs		5	
478.9						TP Depth 17.9
	18		SLS. -Cly., s. - m.h., m. dk. gr.,		18.4	Pull #5 START 1.56
478.2						END 2.16
	19		CLS./ICL. trans. zone; shy, m. dk.gr. s.-m:h., close ptgs w/ tr.-hvy. cl. coa/fkd.			TIME 20 Drl 20 RAN 4.0 REC 5.2
	20				6	LOSS 0 Unacc 0
	21					
474.8	22				21.9	TI & TP Depth 21.9

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PROJECT	HOLE NO.
GALLIPOLIS Locks, Dam	R-81/2

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PROJECT Gallipolis Lock & Dam			INSTALLATION ORH-CD		SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	23		ICb - 5. -mih, r. br., bkn; s/k.		↓	Pull #6 START 2:15 End 2:22 Time 7 Drl 7 Ran 5.0
	24				7	REC 5.2 LOSS 0 unacc 0
	25					
					25.7	
	26					
	27				8	TI Depth 26.1 TP Depth 26.9 Pull #7 START 2:35
	28				28.4	End 2:50 TIME 15 Drl 15 Ran 8.0
	29					REC 8.8 LOSS 0 unacc 0
	30				9	
	31					
	32				32.2	
	33					TI Depth 34.4 TP Depth 34.9
	34		TC 34.4.			

DRILLING LOG

DIVISION	INSTALLATION	SHEET
ORD	ORH-CD	1 OF 3 SHEETS

1. PROJECT: CALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station): MONO R-82 STA 10 + 13 A

3. DRILLING AGENCY: W. 6. JAQUES

4. HOLE NO. (As shown on drawing title and file number): R-82/1

5. NAME OF DRILLER: STEVE FRYE

6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN: 0 - 497.0

8. DEPTH DRILLED INTO ROCK: 464

9. TOTAL DEPTH OF HOLE: 33

10. SIZE AND TYPE OF BIT: 4 15/2 "

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL: B- MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES: 9

15. ELEVATION GROUND WATER: N/A

16. DATE HOLE: STARTED 9-26-89 | COMPLETED 9-26-89

17. ELEVATION TOP OF HOLE: 497.0

18. TOTAL CORE RECOVERY FOR BORING: 33. %

19. SIGNATURE OF INSPECTOR: JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			CLS./SLS. interbdd., m.-dk. gr., s.-m.hd., occ. shy. w/01 occ. hor. ptgs. SLS. Zo. 9.2.-11.8: Sa. len 1.1-1.2 ve bkn. w/hvy. gr. cl. coa/fld 11.8-13.6		1	Pull #1 START 8:03 End 8:17 TIME 8 Drl 8 RAN REC 4.7 LOSS 0 unacc 0
					3.8	
						Tl Depth 4.7 TP Depth 4.9
					2	Pull #2 START 8.24 End 8.34 TIME 10 Drl 10 RAN REC 4.5 LOSS 0 unacc 0
					7.5	
					3	
						Tl Depth 9.2 TP Depth 9.4 Pull #3 Con.

PROJECT: CALLIPOLIS LOCK DAM

HOLE NO. R-82/1

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE	497.0		Hole No. R 82/1	

PROJECT: Gallipolis Lock & Dam
INSTALLATION: ORH-CD
SHEET 2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	11				11.2	Pull # 3
						START 8:41
						End 8:47
						TimE 6
						DrI 6
						RAN
						REC 5.0
	12					LOSS 0
						unacc 0
					4	
	13					
483.4						
	14		SLS,-sa., s.-m.hd., m.-dk. gr., moss. 1/4" gr cl. fld, ptg. @ 15.			TI Depth 14.2
					14.5	TP Depth 14.4
	15					Pull # 4
						START 9:09
						End 9:18
						Time 9
481	16					DrI 9
			CLS. s.m.hd.; m.-dk.gr.; shy; Close med. ptgs. w/to. gr. cl coo./fld		5	Ran
						ReC 4.2
						Loss 0
	17					unacc 0
	18				18.3	TI Depth 18.4
	19					TP Depth 19.4
477.2					6	Pull #5
	20		CLS./ICL trans., s.-m.hd. m-dk.gr.; occ shy			START 9:26
						End 9:38
						Time 12
	21					DrI 12
						Ran
						REC 4.2
						LOSS 0
	22				21.9	unacc 0

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PROJECT: Gallipolis Lock/Dam
HOLE NO: R-82/1

PROJECT *Gallipolis Lock + Dam*	INSTALLATION *ORH-CD*	SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
474.4						TI Depth 22.5 ~~TP Depth 22.6~~
	23		ICL.– r.br., s.– m.hd., bkn.; slk.			Pull #6 START 9.43 End 10.00 Time 17 Drl 17 Ran
	24				7	REC 4.2 LOSS ø Unacc ø
	25					
					25.6	
	26					
	27				8	TI & TP Depth 26.8 Pull #7 START 10:05 End 10:15 Time 9
	28					Drl 9 Ran REC 4.6
	29					LOSS ø
					29.3	Unacc ø
	30					
	31				9	TI & TP Depth 31.4 Pull #8 START 10:20
	32					End 10:28 TIME 8 Drl 8 Ran
464.0	33		Bottom Hole		33.0	REC 2.6 LOSS ø TI Depth 33.0 TP Depth 33.4

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	DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 3 SHEETS

DRILLING LOG — DIVISION: ORD — INSTALLATION: ORH-CD — SHEET 1 OF 3 SHEETS

1. PROJECT: Gallipolis Locks & Dam
2. LOCATION (Coordinates or Station): MONO R-82 STA 10 +43 "A"
3. DRILLING AGENCY: W. G. JAQUES
4. HOLE NO. (As shown on drawing title and file number): R-82
5. NAME OF DRILLER: STEVE FRYE
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 0 497.1
8. DEPTH DRILLED INTO ROCK:
9. TOTAL DEPTH OF HOLE: 33.1

10. SIZE AND TYPE OF BIT: XY5½
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.S.L.
12. MANUFACTURER'S DESIGNATION OF DRILL: B-53 MOBILE
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED: N/A — UNDISTURBED: N/A
14. TOTAL NUMBER CORE BOXES: 9
15. ELEVATION GROUND WATER: N/A
16. DATE HOLE — STARTED: 9-25-89 — COMPLETED: 9-26-89
17. ELEVATION TOP OF HOLE: 497.1
18. TOTAL CORE RECOVERY FOR BORING: 33.1 %
19. SIGNATURE OF INSPECTOR: JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			OLS.- shy.; s.; m.-dk.gr.; bkn; grading 0.1 LC 0.0-2.0			Pull #1 START 1.00 End 1.10 Time 10 Drl 10 Ran 4.9 Rec 4.9 Loss .01 unacc 0
495.1	2		S.S. - sly.; fig.; m.hd.; m.-dk.gr.; mass		1	
	3					
	4			3.8		
492.1	5		CLS./SLS. interbdd.; s.m.h., m.-dk.gr. CLS shy. w/cl. coa. on close ptgs 0.3 L.C. btwn 5.0 & 10.0			T1 Depth _____ TP Depth 5.0 Pull #2 START 1:20 End 1:29 Time 9 Drl 9 Ran 5.2 Rec 4.7 Loss 0.3 unacc 6
	6				2	
	7			7.4		
	8					
488.1	9		SLS. Sa., s.-m.hd., m.-dk.gr.		3	
	10		Cont.			T1 Depth 10.0

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PROJECT: Gallipolis Locks Dam — HOLE NO. R-82/2

PROJECT Gallipolis Lock & Dam			INSTALLATION ORHCD			SHEET 5 OF 3 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) a	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
486.9						TP Depth 10.1
						Pull #3
	11					START 1.40
						End 1:54
					11.2	TIME 14
						Drl 14
						Ran 4.8
						REC 4.5
	12					Loss 0.3
						unacc θ
	13				4	
482.9	14					
			SS sly., f.g., m. hd., m.-dk.gr.			TI Depth 14.8
			cl.coa., hor. ptg.@ 14.3 bkn.			TP Depth 14.9
			15.0 -15.7: 1/4" cl.coa., cls			Pull #4
	15		lam@ 15.7		14.8	START 2.10
						End 2.20
						TIME 10
481.2						Drl 10
	16		CLS/SLS interbdd.; s.m.hd.;			RAN 4.5
			m.-dk.gr. CLS shy w/cl.coa			REC 4.6
			on close plgs			LOSS θ
						unacc θ
	17				5	
	18					
					18.6	
	19					TI Depth 14.8
						TP Depth 14.9
						Pull #5
						START 2.24 LOSS θ
						End 2.30 unacc θ
	20				6	TIME 6
						Drl 6
						Ran 1.6
						ReC 1.4
	21					TI Depth 20.9
						TP Depht 21.0
						Pull #6
	22					

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 497.1				Hole No. R 82/2	
PROJECT Gallipolis Lock & Dam			INSTALLATION ORH-CD			SHEET 3 OF 3 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	23				22.3	Pull #6 START 2.32 END 2.44 Time 12 Drl 12 Ran 4.9 REC 4.5 Loss ø unacc ø	
	24				7		
	25						
471.8						TP Depth 25.9	
			ICL - r.br.;s.-m.hd.; slk.; bKn.			TP Depth 25.9	
	26				26.0	Pull # 7 START 2:56 End 3:08 Time 12 Drl 12 Ran 4.6 REC 5.2 Loss ø unacc ø	
	27				8		
	28						
	29						
	30				29.8		
	32				9	TI & TE Depth 30.5 Pull #8 START 7:35 End 7:42 Time 7 Drl 7 Ran 2.9 REC 2.8 Loss ø unacc ø	
464	33		Bottom Hole		33.1		
						TI Depth 33.1	
						TP Depth 33.4	

1. PROJECT Gallipolis Lock & Dam	**10. SIZE AND TYPE OF BIT** 4.15½"		
2. LOCATION (Coordinates or Station) MONO R-83 STA. 10+53 A	**11. DATUM FOR ELEVATION SHOWN (TBM or MSL)** M.S.L		
3. DRILLING AGENCY W.G. JAQUES	**12. MANUFACTURER'S DESIGNATION OF DRILL** B-53 Mobile		
4. HOLE NO. (As shown on drawing title and file number) R-83/1	**13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN**	**DISTURBED** N/A	**UNDISTURBED** N/A
5. NAME OF DRILLER STEVE FRY	**14. TOTAL NUMBER CORE BOXES** 10		
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	**15. ELEVATION GROUND WATER** N/A		
	16. DATE HOLE	**STARTED** 9-26-89	**COMPLETED** 9-26-89
7. THICKNESS OF OVERBURDEN 0 - 492.0	**17. ELEVATION TOP OF HOLE** 497.0		
8. DEPTH DRILLED INTO ROCK 464	**18. TOTAL CORE RECOVERY FOR BORING** 33.0 %		
9. TOTAL DEPTH OF HOLE 53.0	**19. SIGNATURE OF INSPECTOR** JF		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0						Pull #1
	1		CLS/SLS interbdd.; s.; m. hd.; m.-dk. gr CLS shy. w/tr. cl. coa on ftgs		1	START 10.44 / End 10.51 / Time 7 / Drl 7 / Ran 4.9 / Rec 4.6 / Loss 0 / Unacc 0
	2					
	3					
	4			3.8		Ti Depth 4.6
	5				2	TP Depth 4.9 / Pull #2
	6					START 11:00 / End 11:09 / Time 9 / End 9 / Ran 4.5 / Rec 4.7 / Loss 0
	7			7.5		Unacc 0
	8				3	
	9					Ti Depth 9.3 / TP Depth 9.4
	10					Conti

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE	497.0			Hole No.	R 83/1
PROJECT Gallipolis Lock & Dam			**INSTALLATION** ORH-CD			**SHEET** 2 OF 3 SHEETS	
ELEVATION a	**DEPTH** b	**LEGEND** c	**CLASSIFICATION OF MATERIALS** (Description) d		**% CORE RECOVERY** e	**BOX OR SAMPLE NO.** f	**REMARKS** (Drilling time, water loss, depth of weathering, etc., if significant) g

Remarks column content:

Pull # 3

10.9 — START 11:14
End 11:28
Time 14
Drl 14
Ran 4.5
REC 4.4
Loss 0
Unacc 0

4

483.3 | TI Depth 13.7
ID Depth 13.9
Pull # 4

14 — SLS. sa., m.hd.; m-dk.gr.;
mass. cl.fld. ptg. @ 16.4
& 16.6 grading @ 17.6

14.6 — START 11:35
End 11:47
Time 12
Drl 12
Ran 4.5
REC 4.4
Loss 0
Unacc 0

5

497.2

18 — CLS/SLS interbdd.; s. ml.hd.
m.-dk.gr. CLS shy.

18.1 — TI Depth 18.1
TP Depth 18.4
Pull # 5

6

START 12:30
End 12:40
Time 10
Drl 10
Ran 5.00
REC 4.9

21.6 — Loss 0
Unacc 0

7

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PROJECT Gallipolis Lock & Dam

HOLE NO R 83/1

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 497.0		Hole No. R-83/1	
PROJECT GALLIPOLIS LOCK & DAM			INSTALLATION ORH-CD			SHEET 3 OF 3 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

ELEVATION	DEPTH	LEGEND	CLASSIFICATION	% CORE	BOX	REMARKS
474.2					7	TI Depth 23.0
	23		ICL: r.br., s.-m.hd., Bkn., SlK			TP Depth 23.4
						Pull # 6
						START 12.45
						End 12.52
	24					TIME 7
						Drl 7
						Ran 1.6
						REC 2.0
						LOSS 0
	25				25.0	TI & TP Depth 25.0
						Pull # 7
						START 1:00
						End 1:07
	26					Time 7
						Drl 7
					8	Ran 5.1
	27					REC 5.0
						Loss 0
						unacc 0
	28					
					28.5	
	29					
	30				9	TI Depth 30.0 TP Depth 30.1
						Pull # 8
						START 1:15
						End 1:23
	31					TIME 8
						Drl 8
						Ran 3.7
						REC 3.8
	32				32.1	LOSS 0
						unacc 0
	33				10	
463.2			Bottom Hole		33.8	TI & TP Depth 33.8

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DRILLING LOG	DIVISION OPD	INSTALLATION ORH-CD	SHEET 1 OF 4 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

10. SIZE AND TYPE OF BIT 4"x5?"

2. LOCATION (Coordinates or Station) MONO R83 / STA 10+43

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W. G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-83/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

5. NAME OF DRILLER STEVE FRYE

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 9-25-89 COMPLETED —

7. THICKNESS OF OVERBURDEN 0 - 497.2

17. ELEVATION TOP OF HOLE 497.2

8. DEPTH DRILLED INTO ROCK 33.2

18. TOTAL CORE RECOVERY FOR BORING 53.2 %

9. TOTAL DEPTH OF HOLE 464

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			SLS - s.m.hd.; m.-dk.gr. w/sa lens			Pull #1 START 8.03 End 8:14 TIME 11 Drl 11 Ran 4.0 REC 3.4 Loss 0.6 Unacc 0
497.7	1 2				1	
493.	3 4		SS. sly.; frg.; m.hd., m.-dk. gr. bkn.		4.0	TI&TP Depth 4.0
	5 6 7		CLS/SLS interbdd. s.m.hd., m.-dk.gr. CLS. sly. w/coa ptgs.		2	Pull #2 START 8:20 End 8:32 TIME 12 Drl 12 Ran 5.4 REC 5.0 Loss 0 Unacc 0
	8				7.8	
487.7	9				3	TI Depth 9.0 TP Depth 9.5
	10					

PROJECT							
GALLIPOLIS Lock & DAM			INSTALLATION OAH-CD				

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SLS. s.-m.hd., m.-dk.gr. occ. cly. sly. ss. len 9.5 -9.8: m. spaced 3-4 in. near hor ptgs			Pull # 3
	11				11.4	START 8:40
						End 8:49
						TIME 9
						Drl 9
						Ran 4.5
						REC 4.8
485.2	12		CLS s.-m.hd., shy., m. dk. gr. occ. sly. bkn. 12.3-13.2: hor., ½" gr. cl. fld. ptg. @ 13.2; sly. 13.2 - 14.2			LOSS 0
						unacc 0
	13				4	
						TI Depth 13.8
	14					TP Depth 13.9
483.0						Pull # 4
			SS., sly., f.g., m. hd. m. gr. bkn. (mech) 14.2 -14.9			START 9:00
						End 9:17
	15				14.9	TIME 17
481.9						Drl 17
			SLS Sa., s.-m.hd., m.-dk gr. bkn., 15.3-15.4: hor., 0. ptg. @ 15.6: ang. Break. w/overcore 15.8 - 16.1			Ran 3.0
						REC 1.6
	16					LOSS 0
						unacc 0
					5	TI Depth 15.4
480.6						TP Depth 16.9
	17		CLS., sly., s.-m. hd., m.-dk.gr. occ. sly. closely spaced (max 3 in) ptgs occ. Cl coa/fld,; bkn			Pull # 5
						START 9:29
						End 9:40
						TIME 21
	18				18.5	Drl 21
						Ran 4.0
						REC 5.2
	19					LOSS 0
						unacc 0
	20				6	TI Depth 19.7
	21					TP Depth 20.9
	22		Cont		21.9	

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	ELEVATION TOP OF HOLE	Hole No.
	497.2	R83/2

PROJECT	INSTALLATION	SHEET
Gallipolis Lock & Dam	ORH-CD	3 of 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Pull # 6
474.6						START 10:20
						End 10:41
	23					TIME 21
						Drl 21
						Ran 4.0
	24					Rec 5.2
						Loss θ
						Unacc θ
	25				24.9	Ti&TP Depth 24.9
						Pull #7
						START 11:00
	26					End 11:14
						TIME 14
						Drl 14
						Ran 5.1
470.6						REC 5.1
	27		ICL. s.m. hd., r. br, SlK., bKm.			Loss θ
						unacc θ
	28					
	29				28.7	
	30					Ti&TP Depth 30.0
						Pull # 8
	31					START 11:30
						End 11:41
						TIME 11
						Drl 11
	32					Ran 5.5
						REC 5.1
					32.3	Loss θ
						unacc θ
	33					
	34		Cont			

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PROJECT	HOLE NO.
Gallipolis Lock & Dam	R-83/2

PROJECT GALLIPOLIS Lock & Dam			INSTALLATION O2H-CD			
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV-ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
						TP 34.2
	35				35.1 TL 34.9	
462.1			Bottom HOLE			

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 3 SHEETS

1. PROJECT GALLipolis Lock & DAM

2. LOCATION (Coordinates or Station) mono R-84 /STA 10+93 "A"

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-84/1

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 - 497/

8. DEPTH DRILLED INTO ROCK 33.1

9. TOTAL DEPTH OF HOLE 464

10. SIZE AND TYPE OF BIT 4"5/8"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9-26-87 — COMPLETED 9-27-87

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 33.1 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
497.1			CLS. shy., s., m-dk.gr., bKn			Pull #1
	1					START 1.58
						End 2.08
						Time 10
						Drl 10
						Ran 4.9
	2				1	REC 5.2
						Loss 0
						unacc 0
	3					
493.4					3.7	
	4		SS. sly.f.g., m.hd., m.gr. 60°, o., t. w/tr. gr. cl coa., 3.7-4.1 grading ve. sly @ 6.0			
	5				2	TI Depth 4.9
						TP Depth 5.2
						Pull #2
						START 2:10
	6					End 2:18
490.9						Time 8
			CLS/SLS. interbdd, s. m.hd., m.-dk.gr. closely spaced (max 3 in) ptgs. w/tr.-hvy cl coa. 9.3-9.8 w/0.2 L.C.			Drl 8
	7					Ran 4.5
					7.4	REC 4.3
						Loss 0
	8					unacc 0
					3	
	9					
						TI Depth 9.3
						TP Depth 9.4
487.9						
	10					

PROJECT GALLIPOLIS Lock & DAM	INSTALLATION ORH-CD		SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SS. ve. sly. fig., m.h., m.gr. w/occ sls. krs: bkn. sly 9.9 - 10.3: 45° ha, irr., o., f. 10.8 - 10.6			Pull #3
486.5						START 2.25
					10.7	End 2:32
	11		CLS/ SLS. interbdd., s.m. hd., m.dk. gr. ptg shy.: Ve. bkn. 12.1 - 12.6			Time 7
						Drl 7
						Ran 4.0
	12					Rec 3.9
						Loss 0.2
					4	unacc 0
	13					
						TI&TP Depth 13.4
						Pull #4
	14					
482.1					14.2	START 2.47
			SS, sly. f.g., m. hd., m.gr. ve sly. 14.4 -15.2 w/closely spaced ptgs: irr., near hor. ptgs @ 16.6 & 16.7 grading more sly. w/ depth			End 3.00
	15					Time 13
						Drl 13
						Ran 4.3
	16					REC 4.7
						Loss 0
					5	unacc 0
	17					
479.8						
			CLS. occ. sly., ptg shy., s.m. hd, m. dk. gr. w/tr. hvy cl. coa on ptgs		17.8	TI Depth 17.7
	18					TP Depth 18.1
						Pull #5
						START 7:35
	19					End 7:45
						Time 10
						Drl 10
	20				6	Ran 4.0
						REC 3.5
						Loss 0
						unacc 0
	21					
					21.3	
475.2	22					TI Depth 21.6
						TP Depth 21.7

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PROJECT GALLIPOLIS Lock & DAM	HOLE NO. R-84/1

PROJECT GALLIPOLIS Lock' DAM					INSTALLATION ORH-CD		SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d		% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		ICC. r. br., s. m. hd., SlK.				Pull #6
							START 7:50
	23					7	End 8:00
							TIME 10
							Drl 10
							RAN 5.1
	24						REC 5.2
							LOSS 0
							unacc 0
	25					25.0	
	26						
	27					8	TI & TP Depth 26.8
							Pull #7
							START 8:07
							End 8:16
	28						Time 9
							Drl 9
							RAN 3.3
	29					28.7	Rec 4.2
							LOSS 0
							unacc 0
	30					9	TI Depth 30.0
							TP Depth 30.1
							Pull #8
	31						START 8:20
							End 8:29
						31.4	Time 9
							Drl 9
	32						Ran 4.8
							REC 4.2
							LOSS 0
						10	unacc 0
	33						
							TI Depth 34.2
462.9	34						TP Depth 34.9

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono R-84 /Sta 11+23 "A"

3. DRILLING AGENCY W.C. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-84/2

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 497.7

8. DEPTH DRILLED INTO ROCK 33.7

9. TOTAL DEPTH OF HOLE 464

10. SIZE AND TYPE OF BIT 4" x 5⅜"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-59 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 10-2-89 COMPLETED 10-2-89

17. ELEVATION TOP OF HOLE 497.7

18. TOTAL CORE RECOVERY FOR BORING 33.7

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.7			CLS shy., s., w/hvy cl. FH. closely spaced plgs			Pull # 1 START 7:56 End 8:04 Time 8 Drl 8 Ran 5.0 Rec 4.8 Loss. 0
	1				1	
	2					
	3					
493.9	4		SS., sly., f.g., m.hd., m.gr. bkn. ha.; t. w/hvy cl coa 5.2 - 7.5 w/ 0.5' LC.; plg. along ha, irr. c.l. stgs @ 8.1 - 8.5		3.8	
	5				2	TI Depth 4.8 TP Depth 5.0 Pull #2 START 8:10 End 8:17 Time 7 Drl 7 Ran 4.3 REC 3.9 Loss 0.5
	6					
	7					
	8					
489.2					8.5	
	9		CLS acc. sly., s.-m. hd., m.dd. gr. bkn. 9.2 = 10.4 w/ 1.0. L.C. 0.1' - SS. len @ 10.4 - 10.5 ve. bk.		3	TI Depth 9.2 TP Depth 9.3
	10		Cont			Cont

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PROJECT Gallipolis Lock & Dam

HOLE NO. R-84/2

PROJECT						INSTALLATION			SHEET 2 OF 3 SHEETS
GALLIPOLIS LOCK & DAM						OLH-CD			

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10					Pull #3
			10.5-14.0 w/o.l. L.C. blwn 13.8 & 14.0		3	START 8:25
	11					End 8:35
						Time 10
						Drl 10
					11.5	Ran 4.4
	12					REC 3.6
						LOSS 1.0
	13					
					4	
483.7	14					TI Depth 13.7
						TP Depth 13.8
			SS, sly; f.g., m.hd., m. gr. sly. ang., smooth, slk ptg. @ 15.9			Pull #4 START 8:43 End 8:50 Time 7 Drl 7
	15					PAN 4.7
481.7	16				15.8	REC 2.7 LOSS 0.1
			SLS./CLS interbdd., s. m. hd., m.-dk.gr., CLS. sly Ve. bkn. 16.4-16.6; bkn., slk 17.0-17.5 w/o.l. L.C.(CLS) cl. loa. on. sly. ptgs. & CLS/SLS. contacts			
	17					
	18				5	TI Depth 16.6 TP Depth 18.4
						Pull #5
	19					START 9.00 End 9.12 Time 12
					19.3	Drl 12 Ran 1.9 REC 3.6 LOSS 0.1
477.5	20					
			CLS. s.,m.hd., m.gr. r.br. 0.2' LC. blwn 22.4 & 22.9		6	TI & TP Depth 20.2
	21					
	22					cont.

						SHEET 3 OF 3 SHEETS
PROJECT GALLIPOLIS LOCKS & DAM				INSTALLATION ORH-CD		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Pull # 6
						START 9:18
					22.7	End 9.30
474.7	23					TIME 12
						Drl 12
			ICC. r.br., s. m. hd., slk.			Ran 4.8
						Rec 4.6
						LOSS 0.2
	24					
	25				7	TI & TP Depth 25.1
						Pull # 7
						START 9.35
	26					END 9:49
						TIME 9
						Drl 9
	27					Ran 4.8
						REC 5.2
					27.4	LOSS 0
	28					
	29				8	
	30				30.1	TI Depth 29.9
						TP Depth 30.6
						Pull # 8
	31					START 9:50
						End 10:04
						Time 14
	32				9	Drl 14
						Ran 3.8
						REC 3.4
						LOSS 0
	33					
464.0			Bottom Hole		33.7	TI & TP 33.7

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	

1. PROJECT **Gallipolis Locks + Dam**

10. SIZE AND TYPE OF BIT **4 15/8"**

2. LOCATION (Coordinates or Station) **MONO R-85   11+33 A**

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) **M.S.L**

3. DRILLING AGENCY **W. G JAQUES**

12. MANUFACTURER'S DESIGNATION OF DRILL **B-53 MOBILE**

4. HOLE NO. (As shown on drawing title and file number) **R-85**

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED **N/A** — UNDISTURBED **N/A**

5. NAME OF DRILLER **STEVE FRYE**

14. TOTAL NUMBER CORE BOXES **10**

6. DIRECTION OF HOLE

☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER **N/A**

16. DATE HOLE — STARTED **9-27-89** — COMPLETED **9-27-89**

7. THICKNESS OF OVERBURDEN **0 - 497.9**

17. ELEVATION TOP OF HOLE **497.9**

8. DEPTH DRILLED INTO ROCK **33.9**

18. TOTAL CORE RECOVERY FOR BORING **33.9** %

9. TOTAL DEPTH OF HOLE **464**

19. SIGNATURE OF INSPECTOR **JET**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.9			CLS -shy, s. m.hd., m-dk.gr.;			Pull #1 START 9.19 End 9.28 Time 9 Drl 9 Ran 4.9 REC 4.5 LOSS Ø
	1					
	2					
	3				1	
	4				3.7	
493.7			SS.- sly f.g., m.hd., m. gr. CLS/SLS fld. ver. frac. 5.0-8.2. grading into			Tl Depth 4.5 TP Depth 4.7 Pull #2 START : 9:37 End 9:46 Time 9 Drl 9 Ran 4.5 Rec 4.4 LOSS 0
	5				2	
491.8	6		SLS.sa., s. m.hd., m-dk. gr. hor. ptgs. ve bkn. 7.0 - 8.5			
	7				7.3	
	8					
489.4			CLS/SLS interbdd, s. m.hd., m-dk.gr sa lens 10.2 -10.7 hvy.cl wa on shy ptgs 12.3 -13.4		3	Tl Depth 9.2 TP Depth 9.4
	9					
	10		Cont.			

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PROJECT **Gallipolis Locks + Dam**   HOLE NO. **R-85/1**

PROJECT GALLIPOLIS LOCK & DAM				**INSTALLATION** ORH-CD		**SHEET** 2 **OF** 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10					Pull #3
						START - 9:55
					10.8	End 10.06
	11					Time 11
						Drl 11
						Ran 4.1
						Rec 4.4
						Loss 0
	12					
	13				4	
						TI Depth 13.5
						TP Depth 13.6
	14					Pull #4
						START 10:10
483.4					14.4	End 10:18
			SS.- sly. stig, m.hd., m.gr hor. cl. coa. ptg. @ 16.0			Time 8
	15					Drl 8
						Ran 5.2
						REC 4.9
						LOSS 0
480.9	16					
			SLS., Sa., S. m.hd, sl. dK.gr. hor ptg. @ 17.0 & 17.5 grading with depth		5	
	17					
	18					
478.7					18.2	
			CLS/SLS interbdd. s.m.hd, m.-dK.gr occ. slk ptg in CLS			TI Depth 18.5
						TP Depth 18.7
	19					Pull #5
						START 10:21
						End 10:30
						Time 9
	20				6	Drl 9
						Ran 4.6
						REC 4.6
						LOSS 0
	21					
	22				21.9	

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| PROJECT GALLIPOLIS Locks & DAm | HOLE NO R-85/1 |

ELEVATION TOP OF HOLE						Hole No. R 85/1

497.9

Hole No. R 85/1

PROJECT: GALLiPOLis Lock + DAm

INSTALLATION: ORH-CD

SHEET 3 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22					
475.3						
	23		ICL - gr. - r.br., S.m. hd., SlK. Trans. 22.6 - 26.0		7	TI Depth 23.1 TP Depth 23.5 Pull # 6 START 10:35 End 10:46 Time 11 Drl 11 Ran 4.2 REC 4.9 LOSS 0
	24					
	25				25.3	
	26					
	27				8	TI & TP Depth 27.5 Pull # 7 START 10:51 End 10:59 Time 8 Drl 8 Ran 4.8 REC 4.7 LOSS 0
	28					
	29				29.0	
	30					
	31				9	
	32					TI Depth 32.2 TP Depth 32.3 Pull # 8 START 11:04 End 11:12 Time 8 Drl 8 Ran 3.5 REC 3.5 LOSS 0
	33				32.6	
	34		cont.		10	

ELEVATION TOP OF HOLE					4979	**Hole No** R 85/1

PROJECT GALLIPOLIS LOCK + DAM   **INSTALLATION** ORH-CD   **SHEET** 4 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34					Pull #8
	35					
462.2			Bottom Hole		35.7	T/ Depth 35.7 TP Depth 35.8

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DRILLING LOG

DIVISION	ORD	INSTALLATION: QRH-CD

SHEET 1 OF 3 SHEETS

1. PROJECT: GALLIPOLIS LOCK & DAM
2. LOCATION (Coordinates or Station): MONO - R-85 / STA 11+63 "A"
3. DRILLING AGENCY: W. G JAQUES
4. HOLE NO. (As shown on drawing title and file number): R-85/2
5. NAME OF DRILLER: STEVE FRY
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 0 - 496.5
8. DEPTH DRILLED INTO ROCK: 31.8
9. TOTAL DEPTH OF HOLE: 464

10. SIZE AND TYPE OF BIT: 4" X 5½
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.S.L.
12. MANUFACTURER'S DESIGNATION OF DRILL: B-53 MOBILE
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED: N/A, UNDISTURBED: N/A
14. TOTAL NUMBER CORE BOXES: 9
15. ELEVATION GROUND WATER: N/A
16. DATE HOLE — STARTED 10-3-89, COMPLETED 10-3-89
17. ELEVATION TOP OF HOLE: 496.5
18. TOTAL CORE RECOVERY FOR BORING: 31.8 %
19. SIGNATURE OF INSPECTOR: JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CLS			Pull #1
			Shy, s-m.hd, m-dk gr..			START 11:22
	1					End 11:32
						Time 10
						Drl 10
						Ran 5.0
	2				1	REC 4.5
						LOSS 0.1
						Unacc 0
	3					
	4				3.8	
	5					II Depth 4.6
						IP Depth 5.0
						Pull #2
	6					START 11:45
						End 11:56
						TIME 11
						Drl 11
	7					Ran 4.8
						REC 4.6
					7.5	LOSS 0.2
	8					unacc 0
	9				3	
487.1						II & IP Depth 9.4
	10		SS. sly.fig., m.hd, m.gr Ptg. @ 10.0 cont			

PROJECT GALLIPOLIS Locks + DAm				INSTALLATION OLH-CD			SHEET 2 OF 3 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d		% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOV.	BOX/SAMPLE	REMARKS
	10					Pull #3
486.2			CLS, shy., S., ve bkn., m.-dk.gr.			START 12:01
	11				11.1	End 12:11
						TIME 10
						Drl 10
						Ran 5.0
	12					REC 5.0
					4	Loss Ø
						Unacc Ø
483.6	13		SS. Sly., flg., m.hd., m.gr. near hor. plg. w/tr. cl. coa @ 13.9 grading more sly w/depth			
	14					
					14.4	T₁ & TP Depth 14.4
	15					Pull #4
481.2						START 12:14
			CLS/SLS interbdd, S.-m.hd, m. dk.gr bkn. along vert frac 15.9 -16.6 over cored @ 17.5 SLS 17.5 -19.1			End 12:25
	16				5	TIME 11
						Drl 11
						Ran 5.2
	17					REC 5.0
						Loss Ø
						unacc Ø
	18				18.2	
477.4	19					
			CLS., shy, S.-m.hd., m. dk. gr. cl. coalfld. hor ptgs. 0.9 L.K. Ltwn 19.4 & 22.4			T₁ Depth 19.4
	20				6	TD Depth 19.6
						Pull #5
						START 12.33
	21					End 12.45
						TIME 12
						Drl 12
						Ran 4.0
						REC 3.1
					21.7	Loss 0.9
	22					Unacc Ø
						Cend

PROJECT						
GALLIPOLIS LocK + DAm			INSTALLATION ORH-CD			

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
474.2	22					
	23		ICC. r.bn., s.m.hd., SIK 1.8 L.C. btwn 27.5 & 31.8			TI Depth 23.4 TP Depth 23.6
	24				7	Pull #6
						START 12.55
						End 1:03
	25					TIME 8
						Drl 8
						Ran 3.9
						REC 4.1
						LOSS o
						unacc o
	26				26.1	
	27					
						TI & TP Depth 27.5
	28				8	Pull #7
						START 1:10
						End 1:21
						TIME 11
	29					Drl 11
						Ran 4.3
						REC 2.5
					29.7	LOSS o
	30					unacc o
	31				9	
464.7	32				31.8	TI & TP Depth 31.8
	33					

DRILLING LOG	DIVISION OCD		INSTALLATION OEH-CD			
1. PROJECT GALLIPOLIS LOCK + DAM			10. SIZE AND TYPE OF BIT 4 15½"			
2. LOCATION (Coordinates or Station) MOND R-86 / STA 11+73 "A"			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.			
3. DRILLING AGENCY W. G. JACUES			12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE			
4. HOLE NO. (As shown on drawing title and file number) R-86/1			13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRYE			14. TOTAL NUMBER CORE BOXES 10			
			15. ELEVATION GROUND WATER N/A			
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.			16. DATE HOLE	STARTED 9-27-89	COMPLETED 9-27-89	
			17. ELEVATION TOP OF HOLE 498.2			
7. THICKNESS OF OVERBURDEN 0 - 498.2			18. TOTAL CORE RECOVERY FOR BORING 34.2 %			
8. DEPTH DRILLED INTO ROCK 34.2			19. SIGNATURE OF INSPECTOR JET			
9. TOTAL DEPTH OF HOLE 464						

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
498.2			CLS - shy., S.-m.hd., m. dk. gr. O.S. L.C. btwn 0.0 & 4.6			Pull #1
	1					START 12.22
						End 12.30
						TIME 8
						Drl 8
						Ran —
	2				1	REC 4.1
						Loss 0.5
						unacc 0
	3				3.6	
	4					
						TI Depth 4.6
						TP Depth 4.9
	5				2	Pull #2
492.8						START 12.37
	6		SS. -sly., fig., m.hd., m. gr. irr. 0. + .5.4 -9.4			End 12.46
						Time 9
						Drl 9
	7					Ran —
						Rec 4.8
					7.3	Loss 0
						unacc 0
	8					
	9				3	
488.8						TI & TP Depth 9.4
	10		cont.			

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE					498.7		Hole No. R-86/1

PROJECT GALLIPOLIS LOCK+DAM
INSTALLATION ORH-CD
SHEET 5 **of** 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		CLS/SLS inter bdd. S.-m.hd., m.-dk.gr 0.3 LC. btwn 11.0 & 11.9 slk.@ top. of sa. len. @ 11.9 ve bKn. 13.6 - 15.2		11.0	Pull # 3 START 12:49 End 12:57 Time 8 Drl 8 Ran Rec 3.9 LOSS 0.3 unacc 0
	11					
	12				4	
	13					
	14					TI Depth 13.6 TP Depth 13.7 Pull # 4 START 1.04 End 1:15 Time 11 Drl 11 Ran — Rec 4.8 LOSS 0 unacc 0
483	15				14.8	
			SS.-sly, fig., m.hd., m.gr. sli. wea. 80°o,t. 15.2-15.8 0 frac. 15.9-16.2			
482	16					
			SLS.-sa., m.hd., m.-dk.gr grading		5	
	17					
	18				18.4	TI Depth 18.4
	19					TP Depth 18.9 Pull # 5 START 1:24 End 1:35 Time 11 Drl 11 Ran — Rec 4.1 LOSS 0 unacc 0
	20				6	
477.6	21		CLS. sly., S. m.hd., m.dk. gr. prgs. shy			
	22					

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PROJECT GAllipolis lock+Dam. **HOLE NO.** R-86/1

		ELEVATION TOP OF HOLE					SHEET 3

PROJECT GALLIPOLIS LOCK + DAM   **INSTALLATION** ORH-CD   SHEET 3 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22				22.1	
			ICl, r.br., s.m. hd., slk		7	TI & TP Depth 22.5
	23					Pull # 6
						START 1:42
						End 1:51
						Time 9
	24					Drl 9
						Ran —
						Rec 5.2
						LOSS 0
						Unacc 0
	25					
					25.5	
	26					
					8	
	27					
						TI & TP Depth 27.7
	28					Pull # 7
						START 2:00
						End 2:08
						Time 8
						Drl 8
	29				29.0	Ran —
						Rec 4.9
						LOSS 0
						unacc 0
	30					
	31				9	
						TI Depth 32.6
						TP Depth 32.8
	32					Pull # 8
						START 2:20
						End 2:42
					32.6	Time 22
						Drl 22
	33					Ran —
						Rec 2.8
						LOSS 0
					10	unacc 0
	34					

		ELEVATION TOP OF HOLE				Hole No. *P-B611*	

PROJECT *GALLIPOLIS Lock + DAm*   INSTALLATION *ORH-LD*   SHEET *4* OF *4* SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			Ich			*PULL #8*
					10	
	35					
464			*Bottom Hole*		*35.4*	*Tl Depth 35.4* *TP Depth 35.5*

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	

1. PROJECT Gallipolis Locks + Dam	10. SIZE AND TYPE OF BIT 4⅝"
2. LOCATION (Coordinates or Station) MONO R-86 / STA 12+03	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY W. G. Jaques	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) R-86/2	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRYE	14. TOTAL NUMBER CORE BOXES 9
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE STARTED 10-3-89 COMPLETED 10-3-89
7. THICKNESS OF OVERBURDEN 0 - 495.7	17. ELEVATION TOP OF HOLE 495.7
8. DEPTH DRILLED INTO ROCK 32.4	18. TOTAL CORE RECOVERY FOR BORING 32.4 %
9. TOTAL DEPTH OF HOLE 414	19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
495.7			CLS.; sly., shy., s.m.hd., m.dk.gr. ve.s., bkn. 3.7 - 4.3			Pull #1
	1					START 8:30 End 8:40 TIME 10 Drl 10 Ran 5.0 REC 3.7 LOSS 0
	2				1	unacc 0
	3					
	4			3.6		Jl Depth 3.7
491.4			SLS., sq., s.m.hd. m.dk.gr			
490.7	5				2	TP Depth 5.0
			SS. - sly., f.g., m.hd, m.gr			Pull #2 START 8:46 End 8:57 TIME 11 Drl 11 Ran 39 REC 5.2
	6					
489.3			CLS/SLS. interbdd., s.m.hd., m-dk.gr. CLS. ↗g.shy.	7.0		LOSS 0 unacc 0
	7		so.: SLS 7.8 - 8.6; 10.7 - 11.2			
	8				3	
	9					Jl & TP Depth 8.9 Pull #3
	10		(cont)	(cont)		cont

				ELEVATION TOP OF HOLE			

ELEVATION TOP OF HOLE 495.7

Hole No. R-86|2

PROJECT: GALLIPOLIS LOCK + DAM

INSTALLATION: ORH-CD

SHEET OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		CLS/SLS			Pull #3
					10.5	START 9:10
	11					End 9 2 /
						Time 11
						Drl 11
						Ran 5.6?
						Rec 4.7
	12					Loss 0
						Unacc 0
483.2					4	
	13		SS., sly. f.g., m.h.d., m.gr ptgs. @ 13.2			
482.1						TI Depth 13.6
	14		SLS.-sa, m.hd, m.dk gr. ptgs. hor min. piece 3 in. max. 11 in		14.1	
	15					TP Depth 14.5
						Pull #4
						START 9:30
						End 9:39
						Time 9
	16					Drl 9
						Ran 3.9
					5	Rec 4.7
						Loss 0
						Unacc 0
478.6	17					
			CLS. s.-m.-dk.gr. w/cl. coa. along hor. ptgs occ. ve bkn.		17.8	
	18					TI Depth 18.3
						TP Depth 18.4
	19					Pull #5
						START 9:45
						End 9:57
						Time 12
						Drl 12
	20				6	Ran 5.0
						Rec 5.1
						Loss 0
						Unacc 0
	21					
					21.5	
473.7	22		(CONT)	(cont)	(cont)	(CONT)

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PROJECT: Gallipolis lock + Dam

HOLE NO: R-86/2

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	22		ICL. - r.br., s. m.hd., bkn., slk		7	
	23					Tl & TP Depth 23.4
						Pull # 6
	24					START 10:02
						End 10:12
						Time 10
						Drl 10
						Ran 5.2
	25				25.1	Rec 5.2
						Loss 0
						Unacc 0
	26				8	
	27					
	28					
					28.6	Tl & TP Depth 28.6
	29					Pull #7
						START 10:19
						End 10:31
						Time 12
						Drl 12
	30				9	Ran 5.8 ?
						Rec 3.8
						Loss 0
						Unacc 0
	31					
	32					
464			Bottom Hole		32.4	Tl Depth 32.4
	33					
	34					TP Depth 34.3

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DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 3 SHEETS

1. PROJECT GALLIPOLIS Locks + DAM	10. SIZE AND TYPE OF BIT 4 Y 5½
2. LOCATION (Coordinates or Station) MONO R-87 / STA 15+53 "A"	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBLE
4. HOLE NO. (As shown on drawing title and file number) R-87/1	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRYE	14. TOTAL NUMBER CORE BOXES 10
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE — STARTED 9-28-89 — COMPLETED 9-28-89
7. THICKNESS OF OVERBURDEN 0 - 497.4	17. ELEVATION TOP OF HOLE 497.4
8. DEPTH DRILLED INTO ROCK 33.5	18. TOTAL CORE RECOVERY FOR BORING 33.5 %
9. TOTAL DEPTH OF HOLE 464	19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.4			CLS.-sly., S. m.hd., m.-dk gr., w/occ. sa. len.: 0.4 L.C. btwn 0.0 & 4.6			Pull #1 START 8:06 End 8:14 Time 8 Drl 8 Ran 4.9 REC 4.2 LOSS 0.4 unacc
	1				1	
	2					
	3				3.8	
	4					
492.6						T1 Depth 4.6 TP Depth 4.9
	5		SS.-sly., f.g., m. hd., m.gr. w/occ. SLS. lam.		2	Pull #2 START 8:25 End 8:31 Time 6 Drl 6 Ran 4.0 REC 4.6 LOSS .0.5 unacc
	6					
490.7					7.7	
	7		Interbdd. SLS. /CLS. S.-m. hd., m.-dk.gr. SLS occ. sa., CLS. shy. 0.5 L.C. btwn .6.7 & 6.7 sa., m.hd. 8.7-11.0: CLS. 11.7-14.6		3	T1 Depth 8.7?
	8					
	9					TP Depth 9.7
	10		(CONT)	(CONT)		

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PROJECT GALLIPOLIS Lock+DAM — HOLE NO. R-87/1

| PROJECT GALLipolis Lock + DAM | INSTALLATION ORH-CD | SHEET 2 OF 3 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10					Pull # 3
					10.7	START 8:35
						End 8:46
	11					TimE 11
						Drl 11
						Ran 7.0 ?
	12					Rec 4.6
						Loss 0
						Unacc 0
	13				4	
	14					Ti Depth 14.3
482.8						
	15		SS., sly', f.g., m.hd.m.gr. w/ thin, dk. sly lam. & cl coa. pf, s. sly. ptg. @ 15.8 : vert., irr.; t.		15.4	
			15.8 - 16.1 : grading into			TD Depth 15.9
	16					Pull # 4
						START 8.50
480.6						End 859
	17		SLS.; Sa; S.-m.hd., m. dk. gr.			TimE 9
					5	Drl 9
						Ran 3.8
	18					REC 5.1
						Loss 0
						Unacc 0
	19					
478.2					19.2	Ti Depth 19.4
			CLS., m.-dk.gr, S.-m.hd occ. Shy. sly. m.hd. 22.6 - 24.5			TP Depth 19.7
	20					Pull # 5
						START 9:15
						End 9:29
	21				6	TimE 14
						Drl 14
						Ran 4.9
	22		(Cont)	497.4	(Cont)	REC 5.1
						Loss 0
						Cont

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PROJECT						
Gallipolis Lock + Dam				INSTALLATION ORH-CD		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22					Pull #5
					22.6	
	23					
	24				7	
472.9						Tl Depth 24.5
						TP Depth 24.6
	25		ICL.- r. br., s. m.hd. sllc. 0.1 L.C. btwn. 24.5 & 28.3			Pull # 6
						START 9.33
						End 9.45
						TIME 12
						Drl 12
	26					Ran 3.9
					26.3	REC 4.7
						LOSS 0.1
	27					Unacc 0
					8	
	28					
						Tl Depth 28.3
					28.5	TP Depth 28.4
	29					Pull # 7
						START 9.55
						End 10.06
						TIME 11
						Drl 11
	30					Ran 5.3
						REC 5.2
					9	LOSS 0
	31					Unacc 0
	32					
	33					
464			Bottom Hole		33.5	Tl Depth 33.5
						TP Depth
	34					

DRILLING LOG	DIVISION ORD		INSTALLATION ORNCD		SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock + Dam

10. SIZE AND TYPE OF BIT 4 YSL

2. LOCATION (Coordinates or Station) MONO R-87, STA 12+43 "A"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-87/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

5. NAME OF DRILLER STEVE FRYE

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER 0

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 9-29-89 COMPLETED 9-29-89

7. THICKNESS OF OVERBURDEN 0-496.3

17. ELEVATION TOP OF HOLE 496.3

8. DEPTH DRILLED INTO ROCK 32.3

18. TOTAL CORE RECOVERY FOR BORING 32.3 %

9. TOTAL DEPTH OF HOLE 464

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.3			CLS.- Sly. S.m. hd., m.-dk gr. w/ bcc. sa. lens			Pull #1
	1					START 12.25
						End 12.32
						Time 7
						Drl 7
					1	Ran 5.0
	2					REC 4.6
						Loss 0
						unacc 0
	3					
492.6					3.7	
	4		SS.- sly, f.g., m. hd., m. gr. w/ thin, dark SlKs, & lam ; ccc. ft'y. along Slk/lam			
						Tl Depth 4.6
	5					TP Depth 5.0
						Pull #2
					2	START 12.38
	6					End 12.49
						Time 14
						Drl 11
						Ran 4.7
	7					REC 5.2
489					7.3	Loss 0
						unacc 0
	8		CLS./SLS inte. b.dd, s.-m. hd., m.dk. gr. ve. bkn 7.3-9.8; SLS.-9.8-11.7 Shy. CLS 11.7-12.2. w/0.2 LC			
	9				3	
						Tl Depth 9.8
	10		(CONT)		Con't	TP Depth 9.9

PROJECT Gallipolis Locks + Dam

HOLE NO. R-87/2

PROJECT	INSTALLATION	SHEET 2 OF 3 SHEETS
Gallipolis Lock+Dam	ORH-CD	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		CLS/SLS			Pull #3
						1. START 12:55
						End 1:06
	11				10.5	TIME 11
						Drl 11
						Ran 4.0
						Rec 3.9
						Loss 0
484.1	12					Unacc 0
			SLS.- m-dk. gr., S. m. hd. pts. shy interbdd w/CLS.		4	
	13					
	14				13.9	TI & TP Depth 13.9
						Pull #4
						START 1:10
						End 1:18
	15					TIME 8
						Drl 8
						Ran 4:5
						REC 4:3
	16				5	LOSS 0
						Unacc 0
479.2	17					
			SLS. m-dk. gr., S. m. hd. pts. shy, interbdd w/ CLS.			
	18				17.7	
						TI Depth 18.2
						TP Depth 18.4
	19					Pull #5
						START 1.25
						End 1:37
					6	TIME 12
						Drl 12
	20					Ran 4.5
						REC 4.3
						LOSS 0
	21					Unacc 0
					21.4	
					7	
	22		Cont		(Cont)	

| PROJECT Gallipolis Lock + Dam | | | INSTALLATION ORH-CD | | | SHEET 3 OF 3 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		ICC. r.br., s.m. hd. ve bkn. below 25.1		7	TI & TP Depth 22.7
	23					Pull #6
					7	START 1:45
						End 1:52
	24					Time 7
						Drl 7
						Ran 4.9
						REC 5.2
	25				25.1	LOSS 0
						unacc 0
	26					
	27				8	
						TI & TP Depth 27.6
						Pull #7
	28					START 2:10
					28.7	End 2:23
	29					Time 13
						Drl 13
						Ran 4.8
						REC 4.9
	30					LOSS 0
					9	unacc 0
	31					
	32					
464			BoTTom Hole		32.3	TI Depth 32.3
						TP. Depth 32.4

ENG FORM 1836-A JUN 67   GPO 1969 OF-329-263

| PROJECT Gallipolis Locks + Dam | HOLE NO. R-87/2 |

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET OF SHEETS

1. PROJECT GALLIPOLIS Lock + DAm	10. SIZE AND TYPE OF BIT 4 15/16
2. LOCATION (Coordinates or Station) MONO R-88 /STA 12+53 M	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W. G JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B.- MOBIL
4. HOLE NO. (As shown on drawing title and file number) R-8811	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN / DISTURBED N/A / UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRYE	14. TOTAL NUMBER CORE BOXES 10
6. DIRECTION OF HOLE	15. ELEVATION GROUND WATER N/A
☑VERTICAL ☐INCLINED _____ DEG. FROM VERT.	16. DATE HOLE / STARTED 9/29/89 / COMPLETED 9/29/89
7. THICKNESS OF OVERBURDEN Ø 497.5	17. ELEVATION TOP OF HOLE 497.5
8. DEPTH DRILLED INTO ROCK 33.9	18. TOTAL CORE RECOVERY FOR BORING 33.6 %
9. TOTAL DEPTH OF HOLE 463.6	19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.5						Pull # 1
	1		CLS.-s.m.hd.m.-dk.gr. w/occ sly/sa lam.			START 10:45 End 10:57 Time 12 Drl 12 Ran REC 4.6 LOSS 0 unacc
	2				1	
	3					
					36	
	4					
	5					TI Depth 4.6
					2	TP Depth 5.4 Pull # 2
491.5	6					START 11.07 End 11.18
	7		SS.-sly., f.g.,nl.hd., m.gr. 0.3 CLS. len.@ 9.0-9.3; 0.4 CLS len @ 9.8-10.2.(0.2 L.C.)		7.3	TIME 11 Drl 11 Ran REC 4.7 LOSS 0 unacc 0
	8				3	
	9					
	10		(cont)		(cont)	TI Depth 9.3 TP Depth 9.4 Pull #3 (cont)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   (TRANSLUCENT)

| PROJECT GALLIPOLIS Lock+Dam | HOLE NO. R-8811 |

| PROJECT Gallipolis Lock + Dam | INSTALLATION ORH-CD | SHEET 2 OF 3 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10					Pull # 3
						START: 11.22
						End 11.31
					10.7	TIME 9
	11					Drl 9
					1	Ran
						Rec 3.0
						LOSS 0.2
485.4	12					unacc
			SLS - Cly, S., m. hd., m.-dk. gr.		4	Ti & TP Depth 12.5
	13					Pull # 4
						START 11:37
						End 11:41
						TIME 4
						Drl 4
						Ran
	14					REC 2.9
483.2					14.3	LOSS 0
			SS - sly., fig., m. hd., m. gr. occ. ptg along sly. lam. grading into			unacc
	15					Ti Depth 15.4
						TP Depth 15.5
						pull #5
	16					START 12.21
					5	End 12.29
						Time 8
	17					Drl 8
						Ran
480						REC 4.6
			SLS. S.-m. hd., m. dk. gr			LOSS 0
	18				17.9	unacc
478	19					
			CLS. .s.m. hd., m. dk. gr. 0.6 LC. btwn 20.2 24.4		6	
	20					Ti Depth 20.2
						TP Depth 20.4
						Pull #6
	21					START 12:37
						END 12:50
					21.5	TIME 13
	22		(cont)		cont	Drl 13
						cont

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PROJECT GALLiPOLis LOCK + DAM	INSTALLATION OEH-CD				SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		i		7	Ran REC 3.6 LOSS 06 unacc
	23					
	24					
473.1						Ti Depth 24.4 TP Depth 24.5
	25		I cc. - r. br., s. m.hd. slk		25.5	Pull # 7 START 1:00 End 1:11 Time 11 Drl 11 Ran Rec 4.6 LOSS 0 unacc 0
	26				8	
	27					
	28					
	29				29.0	Ti Depth 29.0 TP Depth 29.1
	30				9	Pull #8 START 1:15 End 1:28 Time 13 Drl 13 Ran Rec 4.6 LOSS 0 unacc 0
	31					
	32					
	33					
464			Bottom HOLE		33.6	Ti Depth 33.6 TP Depth 33.9

ENG FORM 1836-A
JUN 67

GPO 1969 OF-328-242

| PROJECT GALLiPOLis LOCK + DAM | HOLE NO. R88/1 |

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Locks + Dam

2. LOCATION (Coordinates or Station) MONO R-88 / STA 12+83 "A"

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R 88/2 R-88/2

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 - 497.8

8. DEPTH DRILLED INTO ROCK 33.8

9. TOTAL DEPTH OF HOLE 464

10. SIZE AND TYPE OF BIT 4" YSK'

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9/29/89 COMPLETED 9/29/89

17. ELEVATION TOP OF HOLE 497.8

18. TOTAL CORE RECOVERY FOR BORING 33.8

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CLS/SLS interbdd.: s.-m hd., m.-dk. gr. 0.3 L.C. bfwn 0.0 & 4.5		1	Pull #1 START 9:20 End 9:28 Time 8 Drl 8 Ran 4.9 Rec 4.2 LOSS 0.3 unacc. 0
					3.7	
493	5		SS., sly., f.g., m.hd. gr.			TI Depth 4.5 TP Depth 4.7 Pull #2
					2	STAET 9:35 End 9:46 Time 11 Drl 11 Ran 4.6 Rec 5.0 LOSS 0 unacc 0
491.8	6		CLS., sly. m.hd., m.-dk gr., shy		7.4	
					3	
488.0	10					TI&TP Depth 9.5

PROJECT Gallipolis Lock + Dam HOLE NO. R-88/2

PROJECT			INSTALLATION			SHEET 2 OF 3 SHEETS
6allipolis Lock + DAM			ORH-CD			

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SLS - Sa. m.hd., m.dk.gr. CLS. 11.0 - 11.6			Poll # 3
						START 9:49
	11				11.0	End 9:57
						Time 8
						Drl 8
						Ran 4.9
	12					Rec 4.7
						Loss 0
485.5						unacc 0
			CLS - sly., shy., S. m. hd., m. - dk. gr.		4	
	13					
483.8	14					
			SS. - sly. f.g., m.hd., m.gr. bkn (mach.) 14.0. - 14.5 near hor. Cl. Coa. ptgs. @ 15.1, 15.8; 16.0; 16.2; grading		14.2	TI Depth
						TP Depth
						Poll #4
	15					START 10:00
						END 10:11
						TIME 11
						Drl 11
					5	Ran 5.0
	16					Rec 5.2
						Loss 0
481.0						unacc 0
	17		SLS. - Sa., S - m.hd., m-dk.gr			
480.0					17.9	
	18		CLS. - S - m. hd., shy., m. - dk. gr. sa. zo. 18.4 - 19.3 0.2 LC. of wn. 19.4 ∈ 22.7			
	19					
					6	TI & TP. Depth 19.4
						Poll # 5
	20					START 10.23
						END 1032
						TIME 9
						Drl 9
	21					Ran 3.3
						Rec 3.1
						Loss 0.2
					21.5	unacc 0
	22		cont			

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ELEVATION TOP OF HOLE	497.8		Hole No. R 88/2

PROJECT	INSTALLATION	SHEET 3
Gallipolis Locks + Dam	ORH-CD	OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY q	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22				7	TI & TP Depth 22.7
	23					Pull # 6
						START 10:40
						END 10:45
						TIME 5
						Drl 5
474.0						Ran 2.5
	24		ICL. r.br., s.m.hd., bkn., slk.			REC 2.4
						LOSS 0
						Unacc 0
	25				25.0	TI Depth 25.1
						TP Depth 25.2
						Pull # 7
					8	START 10:51
	26					END 11:00
						TIME 9
						Drl 9
						RAN 4.2
	27					REC 3.5
						LOSS 0
						UNACC 0
	28				28.1	
						TI Depth 28.6
	29					
						TP Depth 29.4
					9	Pull # 8
	30					START 11:15
						END 11:28
						TIME 13
	31					Drl 13
						RAN 4.6
						REC 3.8
	32					LOSS 1.4
						Unacc 0
	33				10	
464			Bottom Hole		33.8	TI Depth 33.8
						TP Depth 34.0

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DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 of 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO R-89 / STA 12+93A

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R89-1 / R 89/1

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0   497.6

8. DEPTH DRILLED INTO ROCK 33.4

9. TOTAL DEPTH OF HOLE 464

10. SIZE AND TYPE OF BIT 4" X 5'

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9-28-89 COMPLETED 9-29-89

17. ELEVATION TOP OF HOLE 497.6

18. TOTAL CORE RECOVERY FOR BORING 33.4 %

19. SIGNATURE OF INSPECTOR David Nugen

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CLS - s. m. hd., m. dk. gr 0.3 LC. btwn 0.0 & 4.6			Pull #1
	1					START 2:15
						End 2:24
						Time 9
						Drl 9
	2				1	Ran 4.6
						Rec 4.3
						Loss -0-
	3					unacc
	4				3.8	
493						TI & TP Depth 4.6
	5		SLS - s. m. hd.; m-dk. gr Cl. len 0.4 L.C. 5.2-5.5			Pull #2
492						START 2:30
	6		S.S. sly, f.g, m. hd., m. gr.		2	End 2:39
			45° ptg @ 7.5.			Time 9
	7		Slk con rac @ 8.7			Drl 9
						Ran 4.8
						Rec 4.7
	8				7.6	Loss 0
						unacc
488.9					3	
	9		CLS/SLS interbdd. S. m. hd. m. dk. gr 0.4 LC. btwn 9.3 & 12.5			TI Depth 9.3
						TP Depth 9.4
	10					

PROJECT Gallipolis Lock & Dam			INSTALLATION ORH-CD			SHEET 2 OF 3 SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		CLS/SLS			Pull #3
						START 2:42
						End 2:49
	11					TIME 7
					11,3	Drl 7
						Ran 4.2
	12					REC 3.8
						LOSS 0.4
						unacc 0
	13				4	
						TL Depth 13.5
						TP Depth 13.6
	14					Pull #4
						START 2.52
						End 3.01
482.9						TIME 9
	15		SS- ve. sly. fig., m.hd., m.gr.		15,1	Drl 9
						Ran 4.1
						REC 4.2
	16					LOSS 0
481.2						unacc 0
	17		CLS./SLS. interbdd; S. m.hd., m.-dk.gr. Cl. coa. l fld., ptgs.: SLS. occ. Sa		5	
	18					TL&TP Depth 17.7
						Pull #5
						START 7:27
						End 7:36
	19				188	TIME 9
						Drl 9
						Ran 4.1
	20					REC 4.1
						LOSS 0
477.1						unacc 0
	21		CLS - Sty, S. m.hd. m. dk.gr.		6	
	22					TL&TP Depth 21.8

ENG FORM 1836-A
JUN 67

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PROJECT Gallipolis Lock & DAM | HOLE NO. R-89/1

PROJECT			INSTALLATION				SHEET 3 OF 3 SHEETS
Gallipolis Lock & Dam			OPH-CD				

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22				22.3	Pull # 6
						START 7:40
	23					End 7:48
						Time 8
						Drl 8
474						Ran 3.9
	24		ICL. -s. m.hd., slk, r.br. bkn		7	REC 3.2
						Loss 0
						unacc 0
						TI Depth 23.6
						TD Depth 25.9
	25					Pull # 7
						START 7:52
						End 8:02
						Time 10
						Drl 10
						Ran 0.1
						REC 2.4
					25.8	Loss 0
	26					unacc
						TI & TP Depth 26.0
						Pull # 8
						START 8:12
						End 8:20
	27				8	Time 8
						Drl 8
						Ran 3.9
						Rec 3.2
						Loss 0
	28					
					28.4	
	29					TI & TP Depth 29.2
						Pull #9
						START 8:25
						End 8:37
						Time 12
	30				9	Drl 12
						Ran 5.0
						REC 1.5
						Loss 0
	31					TI & TP Depth 30.1
						Pull #10
						START 8:40
						End 8:49
	32					Time 9
						Drl 9
						Ran -0.5?
						Rec 1.3
						Loss 1.4
	33					
					33.6	TI Depth 33.6
464	34					TP Depth 34.4

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD		SHEET 1 OF 3 SHEETS

1. PROJECT GALLiPOLiS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO - R-89 /STA 13+23 "A"

10. SIZE AND TYPE OF BIT 4 1/8/2

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W. G. JAGUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBiLE

4. HOLE NO. (As shown on drawing title and file number) R-89/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	**DISTURBED** N/A	**UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 9

5. NAME OF DRILLER STEVE FRYE

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE	**STARTED** 10-5-89	**COMPLETED** 10-6-89

7. THICKNESS OF OVERBURDEN 0 - 498

17. ELEVATION TOP OF HOLE 498.1

8. DEPTH DRILLED INTO ROCK 34.1

18. TOTAL CORE RECOVERY FOR BORING 34.1

9. TOTAL DEPTH OF HOLE 464

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
498.0			CLS. S. m. hd., m.-dk. gr. 1.4 LC 0.0 - 4.9			Pull #1
	1					START 1:12
						End 1:20
						Time 8
						Drl 8
						Ran 5.0
	2					Rec 3.5
						Loss 1.4
	3				1	unacc 0
	4					
492.8	5				4.9	Tl Depth 4.7 / Tp Depth 5.0
			SLS - sl. sa., S. nl. hd., m. dk. gr.			Pull #2
	6					START 1:28
						End 1:38
						Time 10
						Drl 10
						Ran 4.9
491.	7				2	REC 4.6
			CLS/SLS. interbdd., s. m. hd., m. -dk. gr 0.3 L.C. btwn 7.0 & 9.8			LOSS 0.3
						unacc 0
	8					
	9				8.7	
					3	
	10					Tl Depth 9.5 / Tp Depth 9.9

PROJECT: GALLiPOLiS LocK + DAM

INSTALLATION: ORH-CD

SHEET 2 OF 8 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	10					Pull # 3
						START 1:48
	11					End 1:53
					3	Time 5
						Drl 5
						Ran 4.1
	12					REC 4.5
						Loss θ
					12.4	Unacc θ
	13					
	14				4	TL Depth 14.0
						TP Depth 14.3
483.2	15		S.S. - Sly. f.g. m.hd, m.gr.; o., irr. jt 15.3 - 15.7 grading			Pull #4
						START 2:01
482.4						End 2:12
					15.7	Time 11
	16		SLS. - sli. sd., S. m. hd, m. dK. gr. o.7. LC. btwn 14.3 & 19.5 prcb. @ top of Run.			Drl 11
						Ran 5.5
	17					REC 4.5
					5	Loss 0.7
	18					unacc θ
	19					
478.6						TL & TP Depth 19.5
	20		CLS - S. - m hd. m. - dK. gr., w/sly. lenes, bKn. SlK 0.4 L.C. btwn 19.5 & 23.8		19.9	Pull #5
						START 2:19
						End 2:30
	21				6	Time 11
						Drl 11
						Ran 4.4
						Rec 3.9
						Loss 0.4
	22					unacc θ

ENG FORM 1836-A JUN 67   GPO: 1949 OF—329-243   PROJECT: GALLipoLis LocK+Dam   HOLE NO. R-89/2

PROJECT GALLIPOLIS Lock + DAm		INSTALLATION ORH-D			SHEET 5 OF 5 SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX or SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22				6	
	23					Ti Depth 23.2
474.3					23.8	TP Depth 23.9
	24		Icc. r. br., S. m. hd., bkn. slk			Pull # 6
						START 2:40
	25					End 2:57
						Time 17
						Drl 17
					7	Ran 5.8
	26					REC 52
						LOSS 0
						unacc 0
	27					
					27.6	
	28					
	29					Ti Depth 29.0
					8	TP Depth 29.4
						Pull #7
	30					START 7:35
						End 7:47
						Time 12
						Drl 12
						Ran 1.5
						REC 1.9
						LOSS 0
						unacc
	31				30.9	Ti & TP Depth 30.9
						Pull #8
						START 7:55
	32					End 8:05
						Time 10
						Drl 10
					9	Ran 3.5
						REC 3.3
						LOSS 0
						unacc 0
	33					
46+	34		Go To 34-3			Ti & TP Depth 34.4

DRILLING LOG

DRILLING LOG	**Division** ORD	**INSTALLATION** ORH-CD	**Hole No.** R 74 1 **SHEET 1 OF 5 SHEETS**

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO R90 1STA 13+33 'A"

3. DRILLING AGENCY W. 6. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-90/1

5. NAME OF DRILLER STEVE FRYS

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0- 498.1

8. DEPTH DRILLED INTO ROCK 34.1

9. TOTAL DEPTH OF HOLE 464

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M. S. L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — **DISTURBED** N/A **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 10-4-89 COMPLETED 10-4-89

17. ELEVATION TOP OF HOLE 498.1

18. TOTAL CORE RECOVERY FOR BORING 34.1 %

19. SIGNATURE OF INSPECTOR J. E. T.

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.9			SS. f. m. gr., m. hd. sta. br., bkn			Pull #1
	1		CLS s.-m. hd., m. dk. gr., shy 1.3. L.C. btwn 0.0. & 4.9			STart 11.07 End 11.17 Time 10 Drl 10 Ran 5.0 Rec 3.6 Loss 1.3 unacc
	2					
	3				1	
					3.4	
	4					
	5					Ti Depth 4.9 Tp Depth 5.0
492.4						Pull #2
	6		SLS-sd., m. hd., m.-dk. gr.			STart 11.26 End 11.40 Time 14 Drl 14 Ran 4.5 Rec 2.9 Loss 1.6 unacc
491.1	7				2	
	8		CLS/SLS inter bdd., s-m. hd. m.-dk. gr CLS.-shy SLS-occ. sa.! Cl. coq ptgs. 1.6. L.C. btwn 7.0 & 9.4 0.1 L.C. btwn 9.4 & 14.4 0.5 L.C. (prob) 14.4. -15.3			
	9					
	10				9.4	Ti Depth 9.4 Tp Depth 9.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock + Dam **HOLE NO.** R-90/1

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PROJECT GALLIPOLIS Lock+Dam				**INSTALLATION** O.R.H-CD		**SHEET** 2 **OF** 3 **SHEETS**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10					Pull #3
	11					START 12.21
						End 12.30
						Time 9
						Drl 9
	12				3	Ran 4.9
						Rec 4.9
						Loss 0.1
	13					Unacc
					13.2	
	14					
						T.I.&.TP Depth 14.4
	15					Pull #4
						START 12:35
475.8						End 12:44
	16		SLS-sa., s.ni.hd., m.-dk.gr		4	Time 9
			CLS Lenses 17.5 - 19.9			Drl 9
			0.4 L.C. 18.9 - 19.3			Ran 4.5
			LProb.			Rec 4.0
	17					Loss 0.5
					17.0	unacc
	18					
	19					T.I.&.TP Depth 18.9
					5	Pull #5
478.4						START 12.57
	20		SLS-s.m.hd., ni.dk.gr.			End 1.08
			w/f.q cs. lam. & lenses			Time 11
			& ccc cls le..			Drl 11
					20.8	Ran 4.5
	21					Rec 3.9
						Loss 0.4
						unacc
	22					

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PROJECT						
Gallipolis Lock + Dam			INSTALLATION OPH-CD			SHEET of 5 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22					
	23					
474.5					6	TI Depth 23.2
						FO Depht 23.4
	24		ICl. s. m.hd, n.br., 6kn. slk.			Pull # 6
						START - 1:15
					24.5	End - 1:24
						TIME 9
	25					Drl 9
						Ran 4.0
						REC 1.8
						LOSS 1.1
	26					TI Depth 26.1
	27					
					7	TP Depth 27.4
						Pull #7
	28					START 1:28
						End 1:38
						Time 10
						Drl 10
	29				29.1	Ran 3.5
						Rec 4.8
						LOSS -0
						TI & TP Depth 30.9
	30					Pull # 8
						START 1:45
						End 1:55
						TIME 10
	31				0	Drl 10
						Ran 3.4
						Rec 2.5
						Loss 0
						unacc
	32					TI Depth 33.4
						TP Depth 33.9
					32.5	Pull #9
						START 2:00
	33				9	End 2:10
						Time 10
						Drl 10
						Ran 0.4
						Rec 0.9
						Loss 0
464	34		Go To 34.3			TI & TP Depth 34.3

ENG FORM 1836-A JUN 67 | GPO 1962 OF—329-242 | PROJECT Gallipolis Lock + Dam | HOLE NO. R-90/1-

DRILLING LOG	DIVISION ORD		INSTALLATION ORH - CD		SHEET 1 OF 4 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4"x 54½"
2. LOCATION (Coordinates or Station) MONO - R-90 / STA 13+63 "A"	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) msl
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B - MOBILE
4. HOLE NO. (As shown on drawing title and file number) R-90/2	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRYE	14. TOTAL NUMBER CORE BOXES 10
	15. ELEVATION GROUND WATER N/A
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	16. DATE HOLE — STARTED 10-6-89 — COMPLETED 10-6-89
7. THICKNESS OF OVERBURDEN 0 - 498.4	17. ELEVATION TOP OF HOLE 498.4
8. DEPTH DRILLED INTO ROCK 34.4	18. TOTAL CORE RECOVERY FOR BORING 34.4 %
9. TOTAL DEPTH OF HOLE 464	19. SIGNATURE OF INSPECTOR JPT

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SS., m.g.; m.hd., bkn., gr. sta. br.			Pull #1
497.7						START 8:14
						End 8:21
	1					Time 7
						Drl 7
						Ran 5.0
			CLS./SLS. interbead;			Rec 5.0
	2		CLS-s, m.hd., m. dk. gr. shy		1	Loss 0
			SLS. s,-m. hd; m.dk.gn., occ. sa. Closely spaced cl., coa./fld. ptgs.			unacc
	3		0.3. L.C. btwn. 5.0 & 9.8.			
					3.7	
	4					
	5				2	TI & TP Depth 5.0 Pull #2
						START 8:27
						End 8:37
	6					Tmie 8
						Drl 8
						Ran 4.8
	7					Rec 4.5
						Loss 0.3
					7.4	unacc
	8					
	9				3	
	10					TI & TP Depth 9.8

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock+Dam — HOLE NO. R 90/2

PROJECT						
GALLiPoLis LOCK + DAm			INSTALLATION ORH-CD			SHEET 2 of 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10					Pull #3
						START 8:45
						End 8:55
	11					Time 10
					11.2	Drl 10
						Ran 3.8
						Rec 7.1
	12					Loss 0
						unacc
	13				4	
						TL Depth 13.6
	14					TP Depth 13.8
484						Pull #4
			SLS-sli.sa.,s. m.hd., m.dk. qr.			START 9:02
	15					Encl 9:10
483.1					14.9	Time 8.
			SLS.- Sa m.hd., ni-dk.qr.			Drl 8
			hld., irr. vert frac. 15.4.			Ran 3.8
	16		16.1 hor., coa ptq @			Rec 4.1
			16.5, 17.2., 17.4., 17.6.			LOSS 0
						unacc
	17				5	
	18					
479.2					18.7	
	19		CLS.- sly., s., m.hd., ni-			TL & TP Depth 18.9
			dK.qr. w/SLS leixs			Pull #5
			grading into			START 9:22
	20					End 9:37
						Time 15
						Drl 15
					6	Ran 4.8
	21					Rec 3.8
						LOSS 0.8
476.9						unacc
	22					

ENG FORM 1836-A
JUN 67

GPO 1969 OF—329-243

PROJECT	HOLE NO
GALLipolis Lock + DAm	R-90/2

| | | | | | | SHEET 3 OF 4 SHEETS |

| PROJECT 6ALL: POLts Lock + DAm | | | | INSTALLATION OPH-CD | | |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		Icc s. m. hd., r. br., bkn., slk gr. to 24.5 0.8. LC. btwn. 21.5 & 23.5 (prob.)		22.3	
	23					
	24				7	TI Depth 23.5 TP Depth 23.7 Pull # 6 START 10:11 End 10:20 Time 9 Drl 9 Ran 4.8 REC 4.9 LOSS 0 unacc
	25					
	26				26.6	
	27					
	28				8	TI Depth 28.4 TP Depth 28.5 Pull #7
	29					START 10:24 End 10:35 Time 11 Drl 11 Ran 4.7 REC 4.7 LOSS 0
	30				30.4	
	31					
	32				9	
	33					TI Depth 33.1 TP Depth 33.2

44 | 21

ENG FORM 1836-A
JUN 67

GPO: 1969 OF—325-242

PROJECT 6Allipolis Lock + DAm. | HOLE NO. R-90/2

PROJECT GALLipolis Lock + Dam **INSTALLATION** ORH-CD

SHEET 1 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34				34.1	Pull # 8
463.8			Bottom Hole		10	START 10:40
					34.6	End 10:51
	35					Time 11
						Drl 11
						Ran 1.4
						Rec
						Loss
						unacc
						TI & TP Depth 34.6

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CP

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4 Y 3.5
2. LOCATION (Coordinates or Station) Mono R-91 /STA 13+73 "A"	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B 53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) R-91/1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A / UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRY	14. TOTAL NUMBER CORE BOXES 10
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER NA
	16. DATE HOLE STARTED 10-5-89 / COMPLETED 10-5-89
7. THICKNESS OF OVERBURDEN 0	17. ELEVATION TOP OF HOLE 498.4
8. DEPTH DRILLED INTO ROCK -498.4	18. TOTAL CORE RECOVERY FOR BORING 34.5 %
9. TOTAL DEPTH OF HOLE 34.5	19. SIGNATURE OF INSPECTOR JFT

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SS. -mg., gr. mhd. Crushed; sta br. to 0.1			Pull #1 START .2.40 End 2.52 Time 12 Drl 12 Ran 5.0 Rec 4.7 Loss 3 Unacc 4
497.4	1					
	2		CLS -s.m.-dk gr. Slk when bkn.		1	
	3					
	4				3.8	
493.9						TP Depth 4.7 TI Depth 5.0
	5		CLS, /SLS interbdd. s, m. hd., m.-dk gr CLS. s.m.hd., Shy			Pull #2 START 7.28 End 7.40 Time 12 Drl 12 Ran 4.5 Rec 4.0 Loss 0.8
	6		SLS.-occ. sa: cl Coa/fld. Closely spaced hor- pfgs 0.8. LC btwn 4.7 & 9.5		2	
	7		sa SLS 11.5 -12.2 14.7 -15.1			
					7.3	
	8					
	9				3	
	10		(CONT)		(CONT)	TP&TI Depth 9.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam	HOLE NO. R-91/1

PROJECT Gallipolis Lock & Dam			INSTALLATION ORHLD			SHEET 2 OF SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		Cls/sls			Pull #3
						START 7:46
						End 7:53
	11					Time 7
						Drl 7
					11.5	Ran 4.5
						REC 4.6
	12					LOSS 0
						undcc 0
	13					
					4	
	14					TP Depth 14.0
						TI Depth 14.1
						Pull #4
	15					START 7:59
					15,2	End 8.04
						Time 10
						Drl 10
	16					Ran 5.1
						REC 5.0
						LOSS 0
					5	undcc 0
	17					
	18					
480.1						
	19		S.S. -sly -m.hd., Lig., m.gr. w/ thin dk. sly. lam.		19.0	TP & TI depth 19.1
						Pull #5
						START 8:19
						End 8:30
	20					Time 11
						Drl 11
					6	Ran 4.3
	21					REC 4.1
						LOSS 01
						undcc
	22		(CONT)		(CONT)	CONT)

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 498.4				Hole No. R 9011	
PROJECT Gallipolis Locks + Dam	INSTALLATION ORH-CD				SHEET 5 OF SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22					
475.5	23			22.7		
475.1						TP 23.3
						TI Depth 23.4
	24		2CC. R. br., S. m. hd., bKn. s/K. 0.5 LC. btwn. 23.3 & 27.3		M	Pull #6 START 8.39 End 8.51 TIME 12 Dri 12 Ran 3.9 REC 3.5 Loss .0.5 unacc ⊖
	25					
	26			26.4		
	27					
						TP & TI Depth 27.3
	28				8	Pull #7 START 8.57 End 9.08 TIME 11 Drl 11 Ran 4.0 REC 4.0 Loss ⊖ unacc ⊖
	29					
	30					
				30.5		
	31					TP & TI Depth 31.3
						Pull #8
	32				9	START 9.12 End 9.22 Time 10 Drl 10 Ran 3.2 REC 3.0 Loss 0.1 unacc ⊖
	33					
						TP Depth 34.4
464	34		34.9 Bottom Hole			TI Depth 34.5

ENG FORM 1836-A JUN 67   GPO 1965 OF—329-243

PROJECT Gallipolis Lock + Dam	HOLE NO. R-90/1

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DRILLING LOG	DIVISION ORH	INSTALLATION ORH-CD

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4X5.5"

2. LOCATION (Coordinates or Station) MONO R-91/ STA 14+03 A

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-91/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

5. NAME OF DRILLER STEVE FRYE

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 10-6-89 COMPLETED 10-7-89

7. THICKNESS OF OVERBURDEN 0 - 497.7

17. ELEVATION TOP OF HOLE 497.7

8. DEPTH DRILLED INTO ROCK 33.8

18. TOTAL CORE RECOVERY FOR BORING 33.8 %

9. TOTAL DEPTH OF HOLE 464

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.5			SS. m.g., m.hd., sta. br., bkn.			Pull #1
			ClS-S. m.hd., m.dk. gr., bkn.; tr. slk			START 11:05
	1					End 11:13
						Time 8
						Drl 8
						Ran 4.8
						Rec 4.8
	2				1	Loss 0
						unacc 0
	3					
	4				3.8	
	5					TI Depth 4.8
492.9					2	
	6		S.S. sly. f.g., m.hd., m.gr mass dk. gr. sly. stgs starting @ 8.2			TP Depth 5.8
						Pull #2
						START 12.00
						END 12.10
	7					Time 10
						Drl 10
					7.3	Ran 5.1
						Rec 44
	8					Loss .06
						unacc 0
	9				3	
488.4			ClS/S/S			
			(cont)		(cont)	TI Depth 9.8 TP Depth 9.9

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   (TRANSLUCENT)

PROJECT Gallipolis Locks & Dam   **HOLE NO.** R-91/2

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 4977		**Hole No.** R 91/2	
PROJECT Gallipolis Lock + Dam			INSTALLATION ORH-CD		SHEET 2 OF 3 SHEETS	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	10		CLS./SLS. interbdd., s., m. hd. m.-dk. gr. SLS. - occ. sa. CLS. - shy -cl coa/Sd. hor. ptgs		3	Pull # 3 START 12:44 END 12:55 TIME 11 Drl 11 RAN 4.5 REC 4.5 Loss ø unacc ø
	11				11.2	
	12					
	13				4	
	14					
						TP Depth 14.3 TP Depth 14.4
482.7	15				14.8	Pull # 4 START 1.05 End 1:15 Time 10 Drl 10 Ran 4.1 Rec 4.2 Loss ø unacc ø
	16		SS. - sly., m. hd., m. gr., w/dk. gr. sly. lam. slk. sly. cls 15.9, -16.6 grading more sly. w/depth.		5	
	17					
	18					
479.					18.5	Tié TP Depth 18.5 Pull # 5 START 1:20 End 1:29 TIME 9 Drl 9 RAN 5.0 REC 4.7 Loss .03 unacc ø
	19		CLS /SLS. interbdd; SLS. - occ sa CLS. shy -Cl coa/Pla. ptgs grading into.		6	
	20					
477.2						
	21		CLS -S. m. hd., m.-dk gr., shy 0.3 - LC. btwn. 20.5 é 23.5			
	22		(CONT)		(CONT)	(CONT)

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DRILLING LOG (Cont Sheet)

| ELEVATION TOP OF HOLE | | Hole No. | R 91/2 |

| PROJECT | GALLIPOLIS LOCK + DAM | | | | INSTALLATION | ORH-CD | | SHEET OF SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22				22.3	Cont Pull #5
					6	
	23					
474.2						Ti & TP Depth 23.5
	24		1 CC. r.br., s.-mh.d., bk.n. s!k			Pull # 6
					7	START 7:45
						END 7:58
	25					TIME 13
						Drl 13
						Ran 5.1
						Rec 5.0
	26					Loss
					26.1	unacc
	27					
	28				8	
	29					Ti Depth 28.5
						TP Depth 28.6
						Pull # 7
	30				29.9	START ?
						END ?
						TIME ?
						Drl ?
	31					Ran 5.2
						Rec 5.2
					9	Loss -o-
						Unacc -o-
	32					
	33					
464			Kottom Hole		33.7	Ti Depth 33.7
						TP Depth 33.8

GPO 1969 OF—329-243

| PROJECT | GALLIPOLIS Lock + Dam | HOLE NO. R-91/2 |

DRILLING LOG	DIVISION	ORD	INSTALLATION	ORH-CD	SHEET 1 OF 5 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO R-92 / STA 14+13 "A"

3. DRILLING AGENCY W. 6. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-9211

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 - 498.2

8. DEPTH DRILLED INTO ROCK 464

9. TOTAL DEPTH OF HOLE 34.2

10. SIZE AND TYPE OF BIT 4 7/8"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 10-4-89 | COMPLETED 10-5-89

17. ELEVATION TOP OF HOLE 498.2

18. TOTAL CORE RECOVERY FOR BORING 34.2 %

19. SIGNATURE OF INSPECTOR JCT

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
498.2			SS. - m.g., m.hd, m.gn, bkn.			Pull #1 START 2.40 END 2.52 TIME 12 Drl 12 RAN 5.0 REC 4.7 LOSS Ø unacc Ø
496.9	1					
	2		CLS. S., m. hd, m.-dk gr., occ. sa. lens 0.4 L.C. btwn .1.3 & 5.0		1	
	3					
	4				3.6	
						TP: 4.7
493.5	5					TI Depth 5.0
			SS. -sly, fig., m.h., m.-dk., gr.		2	Pull # 2 START. 7.28 End 7.40 TIME 12 Drl 12 RAN 4.5 REC 4.0 LOSS .0.8
	6					
	7				7.5	
490.7						
	8		CLS/SLS. interbdd, s. m. hd., m.-dk. gr. SLS-occ. sa. CLS. -shy w/cl. coa/fla ptgs. 0.3 L.C. btwn 7.5 & 9.8 0.5 L.C. btwn. 9.8 & 14.5 0.3 S. gr. Cl. 14.5 & 14.8 (cont)		3	
	9					TP & TI Depth 9.5 Pull #3
	10					

ELEVATION TOP OF HOLE				498.4	Hole No.	R 92/1

PROJECT Gallipolis Lock + Dam   **INSTALLATION** OCH-CD   SHEET 2 OF 8 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		CLS/SLS			Pull # 3
	11					START 7.46
						End 7.53
	·					Time 7
					11.3	Drl 7
	12					RAN 4.5
						REC 4.6
						Loss 0
						unacc 0
	13				4	
	14					TP Depth 14.0
						Ti Depth 14.1
483.4						Pull # 4
	15		S.S.-ve sly., fg. ni hd.,			START 7.59
			ni.-dk gr. w/ dk gr. sly			END 8.09
			stks.		15.3	Time 10
						Drl 10
	16		CLS lens 16.0 - 16.4			RAN 5.1
			grading more sly			REC 5.0
			w/depth.			LOSS 0
	17				5	unacc 0
	18					
479.5					18.7	
	19		SLS. s. m hd., m.-dk.gr.			Ti & TP Depth 19.1
			w/cly. lams. Sa. 19.4 -			Pull # 5
			≤ 1.0			START - 8.19
	20				6	End - 8.30
						Time 11
						Drl 11
477.2	21					RAN 4.3
			CLS.-s. m.hd. m.-dk.gr			REC 4.1
			wkn.			LOSS 0.1
	22		(CONT)	(Con)		unacc 0
						(CONT)

ENG FORM 1836-A
JUN 67

GPO 1969 OF—329-243

PROJECT Gallipolis Lock + Dam   **HOLE NO.** R-92/1

PROJECT Gallipolis Lock + Dam			INSTALLATION ORH-CD			SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22				22.5	
	23					TP Depth 23.9 TI Depth 23.4
474.6						Pull #6
	24		Icl.-s. m.hd., r.br., bkn. slk. 0.4. lc. btum. 28.8 & 29.9 0.2lc. btum. 29.9 & 34.2		7	START 8.39 End 8.61 TIME 12 Drl 12 RAN 3.9 REC 3.5 LOSS 0.5 unacc o
	25					
	26				26.2	
	27					TP&TI Depth 27.3
	28				8	Pull #7 START 8.57 End 9.08 TIME 11 Drl 11 RAN 4.0 REC 4.0 LOSS o undcc o
	29				29.3	
	30					
	31.				9	TP&TI Depth 31.3
	32					Pull #8 START 9:12 End 9.22 TIME 10 Drl 10 RAN 3.2 REC 3.0 LOSS 0.1 unacc o
	33					
464.2	34		Bottom Hole 34.5			TP Depth 34.4 TI Depth 34.5

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1. PROJECT _Gallipolis Lock + Dam_	10. SIZE AND TYPE OF BIT _QXSK"_
2. LOCATION (Coordinates or Station) _MRNO - R-92 STA 14+42 "AH_	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _M.SL_
3. DRILLING AGENCY _W. B. JAQUES_	12. MANUFACTURER'S DESIGNATION OF DRILL _B-53 MOBILE_
4. HOLE NO. (As shown on drawing title and file number) _R-92/2_	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED _N/A_ UNDISTURBED _N/A_
5. NAME OF DRILLER _STEVE FRYE_	14. TOTAL NUMBER CORE BOXES _9_
6. DIRECTION OF HOLE	15. ELEVATION GROUND WATER _N/A_
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	16. DATE HOLE STARTED _10-9-89_ COMPLETED _10-9-89_
7. THICKNESS OF OVERBURDEN _0 - 498_	17. ELEVATION TOP OF HOLE _498.0_
8. DEPTH DRILLED INTO ROCK _34_	18. TOTAL CORE RECOVERY FOR BORING _34_ %
9. TOTAL DEPTH OF HOLE _464_	19. SIGNATURE OF INSPECTOR _JFT_

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
498.0			SS. -m.g., m. hd., gr. bkn			Pull # 1
492.2						START 8:54
	1		CLS. s. hd., m. dk. gr			End 9:03
			hvy. gr. cl. coa., fld ptgs			Time 9
						Drl 3
	2		0.3. L.C. btwn 0.8. & 4.6		1	Ran 5.0
						REC 4.3
						LOSS 0.3
	3					unacc 0
	4			3.7		
493.1	5		SS. -Ve sly., fig., m. hd., m. -dk. gr. w/closely spaced, s. cl. ptgs.		2	Tl Depth 4.6
						TP Depth 5.0
						Pull #2
	6					START 9:07
491.6						End 9:17
			CLS/SLS interbed, s. m. hd., m. -dk gr.			Time 10
	7		CLS -shy			Drl 10
			SLS -...., ptgs			Ran 4.7
				7.5		REC 5.0
	8					LOSS 0
						unacc 0
	9				3	
						Tl Depth 9.6
	10		(Cont)		(Con)	TP Depth 9.7
						Pull#3

ELEVATION TOP OF HOLE				498.0	**Hole No.** R 92/2	

PROJECT GALLIPOLIS Lock + DAM			**INSTALLATION** ORH-CD		**SHEET** 2 **OF** SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CLS/SLS			Pull #3
	11				11.1	START 9:34 End 9:43 Time 9 Drl 9 Ran 4.4 Rec 4.4 Loss 0 unacc 0
486.4						
	12		SLS-sa., S.-m. hd., mass. m. dr. gr.		4	
	13					
484.4						
	14		CLS -shy., S. m. hd., m. dk. gr.		14.8	TD Depth 14.1 Pull #4 START 9.50 End 10:10 Time 20 Drl 20 Ran 4.8 REC 4.9 Loss 0 Unacc 0
482.8	15					
	16		SS.- sly., figd., m. hd., m. gr. w/ thin. dk. sly. stks. & lenses cly. len. 15.4 -15.6 grading sly. w/ depth. ol. coā., sly. pts. 17.5 -17.9 0.5, LC., CLS. Zo 18.9- 19.8. - cl. pld, coā ptgs		5	
	17					
	18				18.5	TI & TD Depth 18.9 Pull #5
	19				6	START 10:14 End 10:24 Time 10 Drl 10 Ran 3.9 REC 3.4 Loss 0.5 unacc 0
	20					
	21					
476	22		(CONT)		22	

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ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g

PROJECT: GALLipolis Lock + DAM
INSTALLATION: ORH-CD
SHEET 9 OF 3 SHEETS

CLS/SLS. interbdd., s.m hd., m.-dk. gr. SLS.- sli. SA

CLS -shy. cl. coal/fld ptqs. grading

23

24

25

472.0 — 26

Icl. r br, s-m-hd. bkn. slk

27

28

29

30

31

32

33

464 34

Bottom Hole 39.9

25.7

29.3

34.0

7

8

9

Remarks column:

TI & TP Depth 22.8
Pull # 6
START 10.30
End 10.41
Time 11
Drl 11
Ran 3.2
REC 3.2
LOSS 0
unacc 0

TI & TP Depth 26.0
Pull # 7
START 10:45
End 10:56
Time 11
Drl 11
Ran 3.9
REC 3.8
LOSS 0
unacc

TI Depth 29.8
TP Depth 29.9
Pull # 8
START 11.00
End 11.12
Time 12
Drl 12
Ran 4.5
REC 3.2
LOSS 1.0
unacc 0

TP Depth 34.4
TI Depth 34.0

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DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		HOLE NO. R-93/1	SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock + Dam
2. LOCATION (Coordinates or Station) MRN R-93 / STA 14+53"A'
3. DRILLING AGENCY W. G. Jaques
4. HOLE NO. (As shown on drawing title and file number) R-93/1
5. NAME OF DRILLER STEVE FRYE
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN 0 - 498.9
8. DEPTH DRILLED INTO ROCK 34.1
9. TOTAL DEPTH OF HOLE 464

10. SIZE AND TYPE OF BIT 4 X 5⅝"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
14. TOTAL NUMBER CORE BOXES 9
15. ELEVATION GROUND WATER
16. DATE HOLE STARTED 10-12-89 COMPLETED 10-12-89
17. ELEVATION TOP OF HOLE 498.3
18. TOTAL CORE RECOVERY FOR BORING 34.1 %
19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
498.3			CLS/SLS. interbdd, S, m. hd., m. dk gr. CLS.-Shy w/ cl. coa /Sd. Ptgs		1	Pull #1 START 1:13 End 1:22 TIME 9 Drl 9 Ran 5.0 Rec 4.9 Loss 0 unacc 0
	1					
	2		SLS. occ sa Sa. len 1.8 -2.1 0.5 L.C. btwn 4.9 & 7.4., 0.6 LC. 9.4 & 13.0			
	3					
	4				3.6	
	5					TI Depth 4.9 TP Depth 5.2 Pull #2 START 1:28 End 1:38 TIME 10 Drl 10 Ran 4.4 Rec 3.9 Loss 0.5 unacc 0
	6				2	
	7				7.3	
	8				3	
	9					TI & TP Depth 9.4
			(CONT)	(CONT)		cont. next sheet

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock + Dam — HOLE NO. R-93/1

PROJECT **GALLIPOLIS LOCK + DAM**   INSTALLATION **ORH-CD**   SHEET **2** OF **3** SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CLS/SLS			Pull #3
						START 1:45
						End 1:55
						TIME 10
	11					Drl 10
						Ran 3.7
					11.3	REC 3.0
						LOSS 0.6
						unacc 0
	12					
	13					TI Depth 13.0
					4	TP Depth 13.1
						Pull #4
						START 2:03
484.3	14					End 2:14
			SS.-ve sly., fig m.hd.,			TIME 11
			m.gr. CLY SLS. len.			Drl 11
	15		15.4 -15.6 & bkn. Cly			Ran 5.0
			SLS. len 16.6 & 17.0			REC 4.9
					15.4	LOSS 0
						unacc 0
	16					
	17				5	
480.3	18					TI Depth 17.9
			SLS/CLS. interbed			TP Depth 18.1
			CLS/SLS. contact gr. cl.			Pull #5
			coa/fld			
	19		SLS- ccc. sa.		19.1	START 2:19
						End 2:34
			0.1 LC. btwm 17.9 & 21.7			TIME 15
			1.7 LC. btwm 21.7 &			Drl 15
	20		25.0			Ran 3.6
						REC 3.7
						LOSS 0.1
						unacc 0
	21				6	
	22		(CONT)	(CONT)		TI & TP Depth 21.7

ENG FORM 1836-A JUN 67   GPO 1969 OF—329-243   PROJECT **Gallipolis Lock + Dam**   HOLE NO **R93/1**

ELEVATION TOP OF HOLE				498.3		Hole No. R 93/1

PROJECT **GALLIPOLIS LOCK + DAM**   INSTALLATION **ORH-CD**   SHEET **3** OF **3** SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	23				22.8	Pull # 6 START 2:40 End 2:48 TIME 8 Drl 8 RAN 3.4 REC 1.6 LOSS 1.7 unacc 0
	24					
473.3	25				7	TL Depth 25.0 TP Depth 25.1
	26		ICL. r.br., s. m. hd. bkn., slk			Pull # 7 START 2.55 End 3.09 TIME 14 Drl 14 RAN 4.0 REC 4.1 LOSS 0 unacc 0
	27					
	28				27.9	
	29				8	TI&TP Depth 29.1 Pull # 8 START 3:15 End 3:30 Time 15 Drl 15 RAN 5.0 REC 5.0 LOSS 0 unacc 0
	30					
	31				31.6	
	32					
	33					
	34		Bottom Hole 39.1		34.1	Dep 39.1

ENG FORM 1836-A JUN 67   GPO 1949 OF—329-243   PROJECT **GALLIPOLIS Lock+DAM**   HOLE NO. **R-93/1**

DRILLING LOG

DIVISION	INSTALLATION	
ORD	ORH-CD	

1. PROJECT Gallipolis Locks & Dam

2. LOCATION (Coordinates or Station) MONO R-93 STA 14+39 A

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-93/2

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 – 497.9

8. DEPTH DRILLED INTO ROCK 33.9

9. TOTAL DEPTH OF HOLE 464

10. SIZE AND TYPE OF BIT A I 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B- MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 10-13-89 COMPLETED 10-13-89

17. ELEVATION TOP OF HOLE 497.9

18. TOTAL CORE RECOVERY FOR BORING 33.9 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.9			SS..m. hd., m. gr, m.g. bkn.			Pull #1
497.4						
	1		CLS./SLS. interbdd.-s. m.hd., m.-dk. gr. sls -occ. sa			START 9:28
						End 9:35
						TIME 7
						Drl 7
						Ran 5.0
	2		CLS. -shy -cl.coa/fld. ptgs.			REC 4.1
						LOSS 0.8
			0.4 L.C. btwn. 4.9 & 8.7			unacc 0
			0.3. L.C. btwn. 8.7 & 13.1		1	
	3		0.1 L.C. btwn 13.1 & 14.0			
	4				3.8	
	5					TP Depth 4.9
						TI Depth 5.0
						Pull #2
						START 9.52
	6					End 10.03
						TIME 11
						Drl 11
						Ran 4.8
						REC 3.2
	7				2	LOSS .5
					7.5	
	8					
	9					TP Depth 8.6
					3	
	10		cont.			TI Depth 9.8

PROJECT Gallipolis Lock+DAm HOLE NO. R-93/2

| | | | | | | SHEET 2 OF 3 SHEETS |

| PROJECT GALLIPOLIS Lock + DAm | | | | INSTALLATION ORH-CD | | |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CLS/SLS			Pull #3
						START 10.13
						End 10.23
						Time 10
	11					Drl 10
					3	Ran 3.6
						REC 3.6
					11.5	LOSS 1.1
						Unacc 0
	12					
	13					TP Depth 15.3
					4	TI Depth 15.4
						Pull #4
483.9	14					START 10:31
			SS.-Sly. fig., m.hd., m.gr. w/dk. gr. Sly. slks ve. Sly to 16.3.			End 10.42
						Time 11
						Drl 11
	15					Ran 4.7
					15.2	REC 4.7
						LOSS 0
						Unacc 0
	16					
	17				5	
479.4						
	18		SLS/CLS interbd., s.m. hd. m.-dk. gr. cl. coa/fld. @ closely spaced. contracts. Sn. Zo. 19.3 -20.4			TP Depth 18.
						TI Depth 18.
						Pull #5
	19				18.9	START 10:56
						End 11 12
						Time 16
						Drl 16
	20					Ran 5.00
477.5						REC 4.00
						LOSS .9
						Unacc 0
	21		CLS.-Sly., m.dk.gr. s. m.hd closely spaced, gr. cl. coa ptgs		6	
	22		(CONT')		(CONT')	(CONT')

ENG FORM 1836-A
JUN 67

GPO. 1969 OF—328-242

ELEVATION TOP OF HOLE **497.9**

Hole No. **R 93/2**

PROJECT GALLIPOLIS Lock+DAM		INSTALLATION ORH-CD				
					SHEET OF SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
					6	
					22.6	
	23					TP Depth 22.9
						TI Depth 23.1
						Pull # 6
	24					START 10.23
						End 11.36
						TIME 13
473.5				7		Drl 13
						Ran 4.0
	25		Icc. +.br., s. m. hd., bkn., slk.			Rec 4.2
						Loss 0
						unacc 0
	26				26.2	
	27					TP & TI Depth 27.1
						Pull # 7
						START 11:45
	28					End 11:56
				8		TIME 11
						Drl 11
						Ran 4.7
						REC 4.7
	29					Loss 0
	30				30.0	
	31					TP & TI Depth 31.8
				9		Pull # 8
						START 1:00
						End 1.11
	32					Time 11
						Drl 11
						Ran 2.6
						Rec 2.4
						LOSS 0
						unacc 0
	33					
						TP 34.2
464						TI Depth 34.4
			Bottom Hole 34.2	33.9		

PROJECT GALLipolis Lock + DAm   HOLE NO R-93/2

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DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD	SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) mono B-94 / STA 13 + 73 "A"

3. DRILLING AGENCY W. G. Jaoues

4. HOLE NO. (As shown on drawing title and file number) R-94/1

5. NAME OF DRILLER Steve Frye

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 - 498.4

8. DEPTH DRILLED INTO ROCK 34.4

9. TOTAL DEPTH OF HOLE 469.0

10. SIZE AND TYPE OF BIT 4 x 5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 10-4-89 COMPLETED 10-5-89

17. ELEVATION TOP OF HOLE 498.1

18. TOTAL CORE RECOVERY FOR BORING 34.5 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION 498.4	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.8			SS., m.g., m.h., gr. ve. bkn			Pull # 1
	1		interbdd. CLS/SLS, s., m. dk.gr. CLS-0.3-3.0 w/0.8 LC (mech) @ 3.9-4.7; 5a SLS .4.7-5.6, grading into cly. SLS.: bkn. CLSH. occ. sly 6.9-14.6, w/0.5 LC (mech) btwn 6.9 & 8.6 & 1.1 LC btwn 8.6 & 13.3		1	START 2:40 End 2:52 Time 12 Drl 12 Ran 50 REC 4.7 Loss 0 unacc 0
	2					
	3					
	4				3.8	
	5					TP Depth 4.7 TI Depth 5.0 Pull # 2
	6				2	START 7.28 End 7:40 Time 12 Drl 12 Ran 4.5 REC 4.0 Loss 0.8 unacc 0
	7					
	8				8.0	
	9				3	
	10		cont.			TP & T Depth 9.5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock + Dam

HOLE NO. R-94/1

						SHEET 2 OF 3 SHEETS
PROJECT GALLiPoLiS LocK+DAm				**INSTALLATION** ORH-CD		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CLS/SLS			Pull # 3
						START 7:46
						End 7:53
					3	TIME 7
	11					Dr1 7
						Ran 4.5
						REC 4.6
						Loss 0
						Unacc 0
	12				12.0	
	13					
	14				4	TP DEPTH 14.0
						TI DEPTH 14.1
483.5						
	15		SLS, Sa., m.h., m.gr.			Pull # 4
						START 7.59
						END 8.09
						TIME 10
						Dr1 10
						RAN 5.1
482.1	16					REC 5.0
			CLSH., s., m.gr., sly., bKn. grading			Loss 0
						Unacc 0
481.3					16.8	
	17		SLS., S. m.h., m.dK.gr. w/f.ig., sa. lam. Grading			
480.1	18				5	
			CLSH., s. m.h., m.-dK.gr., closely spaced hor. ptgs w/tr. Cl. CO2./fld. occ .sa.			
	19					TP&TI Depth 19.1
478.3						Pull # 5
	20		ICL. m.-dK.gr., s.-m.h., slK., bKn. Trans.			START - 8.19
						End 830
					20.3	TIME 11
						Dr1 11
	21					RAN 4.3
						ReC 4.1
					6	Loss 0.1
						unacc 0
	22		(CONT)		(cont)	(CONT)

						SHEET 3 OF 3 SHEETS

PROJECT **GALLIPOLIS LOCK + DAM**   INSTALLATION **ORH-CD**

ELEVATION a	DEPTH 22b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	23				6	T.P. Depth 23.9
						TI Depth 23.4
						Pull # 6
474.1	24		ICL, r.br., s.m.h., slk. bkn.			START 8:39
						End 8:51
						TIME 12
					24.6	Drl 12
						Ran 3.9
	25					REC 3.5
						LOSS 0.5
						Unacc 0
	26					
	27				7	
						TP & TI Depth 27.3
						Pull # 7
	28					START 8.57
					28.3	End 9.08
						TIME 11
						Drl 11
	29					RAN 4.0
						REC 4.0
						Loss 0
						unacc 0
	30				8	
						TP & TI Depth 31.3
	31					Pull # 8
						START 9.12
						End 9.22
						TIME 10
						Drl 10
						RAN 3.2
	32				31.8	REC 3.0
						LOSS 0.1
						unacc 0
	33				9	
						TP Depth 34.4
						TI Depth 34.5
464	34		End @ 34.2			

ENG FORM 1836-A JUN 67   GPO: 1949 OF—329.262

PROJECT **GALLIPOLIS Lock + DAM**   HOLE NO. **R 94/1**

DRILLING LOG

Field	Value
DIVISION	ORD
INSTALLATION	ORH-CD
Hole No.	R-94/2
SHEET 1 OF 3 SHEETS	

1. PROJECT: GALLIPOLIS LOCK + DAM
2. LOCATION (Coordinates or Station): MONO R-94 / STA 15 + 23 "A"
3. DRILLING AGENCY: W. G. JAQUES
4. HOLE NO. (As shown on drawing title and file number): R-94/2
5. NAME OF DRILLER: STEVE FRYE
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 0 - 497.7
8. DEPTH DRILLED INTO ROCK: 33.7
9. TOTAL DEPTH OF HOLE: 464

10. SIZE AND TYPE OF BIT: 415.5"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.S.L.
12. MANUFACTURER'S DESIGNATION OF DRILL: B-53 MOBILE
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED: N/A — UNDISTURBED: N/A
14. TOTAL NUMBER CORE BOXES: 9
15. ELEVATION GROUND WATER: N/A
16. DATE HOLE — STARTED: 10-10-89 — COMPLETED: 10-10-89
17. ELEVATION TOP OF HOLE: 497.7
18. TOTAL CORE RECOVERY FOR BORING: 33.7 %
19. SIGNATURE OF INSPECTOR: JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.7			ss.-m.g., m.h., gr. bkn			Pull #1 START - 7:40 End - 7:50 TIME - 10 Drl 10 Ran 5.0 REC 4.5 Loss 0 Unacc 0
496.6	1					
	2		CLS/SLS. interodd; s. m.h., m.-sk gr. SLS.-occ. sa CLS.-shy. w/gr. cl. coal/fld. ptgs. @ 8. L.C. btwn. 4.S. & 9.7. 0.5. L.C. btwn. 9.7. & 14.7.		1	
	3					
	4			3.8		
	5					IP Depth 4.5
	6				2	TI DEPTH 5.0 Pull #2 START 7:58 End 8:07 TIME .9 Drl 9 Ran 4.8 REC 4.4 Loss 0.8
	7					
	8			7.4		
	9				3	
	10		(CONT)	(CONT)		TF Depth 9.7 TI Depth 9.8

PROJECT	INSTALLATION	SHEET 2
GALLIPOLIS Lock + DAM	ORH-CD	OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CLS/SLS			Pull #3
	11					START 8:12
						End 8:26
						TIME 14
						DrI 14
						RAN 4.9
					11.7	REC 4.5
	12					LOSS 0.5
						UNACC 0
	13				4	
	14					
483						TP & TI Depth 14.7
	15		SS., sly., fig., m.hd., m. gr. w/ dk. gr. sly. stgs & lenses		15.6	Pull #4
						START 8:35
						End 8:46
	16					TIME 11
						DrI 11
						RAN 5.2
	17					REC 5.0
						Loss 0
					5	UNACC 0
	18					
	19					TP. DEPTH 19.0
					19.3	
						TI Depth 19.7
	20					Pull #5
						START 8.50
						End 9.03
					6	TIME 13
	21					DrI 13
						RAN 4.6
476.2						REC 4.5
						LOSS .2
			SLS			UNACC 0
	22		(CONT)		(CONT)	

ENG FORM 1836-A JUN 67	GPO 1962 OF—329-242	PROJECT GALLIPOLIS Lock + DAM	HOLE NO. R-94/2

| PROJECT GALLipolis Lock&Dam | | | | INSTALLATION ORH-CD | | | SHEET 3 OF 9 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		CLS.-S. m. hd., m. dK.gr. occ. sly, 0.2 L.C. btwn. 21.5 & 24.4			
	23				23.0	
	24					
473.3						TP Depth 24.4
			IOC..r.br, s.-m.hd., bkn., slk.		7	TI Depth 24.5
	25					Pull # 6
						START 9.08
						End 9.20
						TIME 12
						Drl 12
	26					RAN 3.2
						REC 5.2
	27				26.8	
	28				8	TP Depth 27.7
	29					TI DEPTH 29.6
						Pull # 7
						START 9:30
	30					End 9:41
						TIME 11
					30.5	Drl 11
	31					RAN 6.0?
						REC 4.1
						Loss 0
	32				9	Undcc 0
	33					
464			BottomHole		33.7	TP&TIDEPTH 33.7

DRILLING LOG	DIVISION ORD	INSTALLATION OPH-CD	SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono R-95 / STA 15+33 "A"

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-9511

5. NAME OF DRILLER Steve Frye

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 497.8

8. DEPTH DRILLED INTO ROCK

9. TOTAL DEPTH OF HOLE 33.8

10. SIZE AND TYPE OF BIT 4 YSB "

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 10-11-89 COMPLETED 10-11-89

17. ELEVATION TOP OF HOLE 497.8

18. TOTAL CORE RECOVERY FOR BORING 33.8

19. SIGNATURE OF INSPECTOR ET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
497.8	0		SS., m.g., sta. buff, m.hd. mic., bkn. (max 0.2)			Pull #1
	1					START 9.25
						End 9.34
496.2						Time 9
	2		cls./sls. s.m.h., m-dk gr. pky. sky. ve.s. 1.6-2.8. & 5.4.-7.0 w/0.4 LC.; bkn w/overcore 7.0-10.0 w/1.1LC. m.hd. sls 10.0-12.0 w/slk. @ 10.5 shy w/s.cl. coz/fld 12.0-14.8.		1	Drl 9
						RAN 5.0
						RAC 3.6
						Loss 1.4
	3					unacce
	4				3.8	
	5					TF& TI DEPTH 5.0
					2	Pull #2
						START 9.43
	6					End 9.54
						Time 11
						Drl 11
						RAN 4.1
	7					REC 2.1
						Loss 1.3
						uncicc
	8				7.6	
	9				3	TF Depth 9.00
						TI Depth 9.01
						Pull #3
	10		cont		(cont)	CONT

ELEVATION TOP OF HOLE	497.8	Hole No.	L-95/1

PROJECT	GALLipolis Lock+Dam	INSTALLATION	ORH-CD	SHEET	2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10					Pull # 3
						START 10.00
						End 10.08
	11				3	Time 8
						Dri 8
						Ran 4.3
						REC 4.0
						LOSS 0.3
	12					unacc 0
					12.0	
	13					TP Depth 13.3
						TI Depth 13.7
					4	Pull # 4
	14					START - 10:15
						End 10:26
						Time 11
						Dri
483.						Ran 3.5
	15		ss. sly., f.g., m.h., gr. : shy ptgs. 16.5-16.9 sls. 17.1-18.7 w/shy ptgs 17.5-18.0 & 18.5-18.7 f.g. ss w/thin.sly lam. 18.7-22.3			REC 3.6
						LOSS 0
					15.7	unacc 0
	16					
	1'					
	17					TP Depth 168
						TI Depth 16.9
					5	Pull #5.
						START 10.35
						End 10.50
	18					Time 15
						Dri 15
						Run 3.5
						REC 2.6
	19					LOSS 0.9
					19.4	unacc 0
	20					TP & TI Depth 20.4
						Pull #6
						START 10.00
						End 10.11
	21					Time 11
						Dri 11
						Ran 2.5
						Rec 2.5
						LOSS 0
	22		Cont.			unacc 0

PROJECT *GALLipolis Lock+DAm*	INSTALLATION *ORH-CD*	SHEET 2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
					3	Pull # 3 START 10.00 End 10.08 Time 8 Drl 8 RAn 4.3 REC 4.0 Loss 0.3 undcc 0
	11					
	12				12.0	
	13					TP Depth 13.3 TI Depth 13.7
	14				4	Pull # 4 START - 10:15 End 10:26 11 Time 11 Dri RAn 3.5 REC 3.6 LOSS 0 undcc 0
483.						
	15		SS. sly., f.g., m.h., gr. shy ptgs. 16.5-16.9 sls. 17.1-18.7 w/shy Ptgs 17.5-18.0 & 18.5-18.7: f.g. ss w/thin. sly lam. 18.7-22.3		15.7	
	16					
	1'					TP Depth 168 TI Depth 16.9
	17				5	Pull # 5. START 10.35 End 10.50 Time 15 Drl 15 PAn 3.5 REC 2.6 Loss 0.9 undcc 0
	18					
	19				19.4	
	20					TP&TI Depth 20.4 Pull #6 START 10.00 End 10.11 Time 11 Drl 11 Ran 2.5 Rec 2.5 Loss 0 undcc 0
	21					
	22		Cor.t.			

	ELEVATION TOP OF HOLE						
PROJECT						Hole No.	R-9511
Gallipolis Lock + Dam			INSTALLATION ORH-CD			SHEET 3 of 5 SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
475.5						
			CLS., S. m.h., gr., shy transition 23.0 - 24.0		27.7	TL 23.0 TP. 22.9
473.8	24					Pull # 7
			Inc., s., r. br., bkn., s/k. 2.2. L.C. brum. 30.9 & 35.8			START 10.21
						End 10.34
						Time 13
	25					Drl 13
						Ran 4.5
						Rec 4.5
						Loss 0
						unacc 0
	26				26.4	
	27					
						TL & TP 27.5
						Pull # 8
	28					START 10.40
						End 10.51
						Time 11
						Drl 11
	29					Ran 3.4
						Rec 3.4
						Loss 0
						unacc 0
	30				30.0	
	31					TL & TP 30.9
						Pull
						START 12.01
						End 12.15
	32					Time 14
						Drl 14
						Ran 2.9
						Rec 0.7
	33					Loss 2.2
						unacc 2.2
464			Bottom Hole		33.8	TL & TP 33.8
	34					

PROJECT	HOLE NO
Gallipolis Lock + Dam	R-9511

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO R-95 STA 15+66 "A"

3. DRILLING AGENCY W. G Jaques

4. HOLE NO. (As shown on drawing title and file number) R-95/2

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø +98.1

8. DEPTH DRILLED INTO ROCK 464

9. TOTAL DEPTH OF HOLE 34.1

10. SIZE AND TYPE OF BIT 4YS.S"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 10-10-89 COMPLETED 10-11-89

17. ELEVATION TOP OF HOLE 498.1

18. TOTAL CORE RECOVERY FOR BORING 34.1 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
498.1			SS., m.g., m.h., sta. buff. ve bkn.			Pull #1
497.6						
	1		CLS/sls			START 10:16
			S. m.h, m.-dk gr. pky			End 10:25
						TIME 9
			sky, ve·s, cls gr w/			Drl 9
			Sh.			Ran 5.0
	2				1	REC 4.7
						Loss 0.1
						unacc
	3					
	4				3B	
	5					T, Depth 4:8
						TP Depth 5.0.
						Pull #2
	6				2.	START 10:30
						End 10:41
						TIME 11
						Drl 11
						Ran 4.8
	7					REC 5.0
					Z+	unacc
	8					
	9				3	
	10		(CONT)			TI&TP Depth 9.8

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Lock + Dam   HOLE NO. R-95/2

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 498.1			Hole No. R 95/2	
PROJECT GALLiPOLiS LocK + DAM			INSTALLATION OEH-CD			SHEET 2 OF 4 SHEETS	

ELEVATION a	DEPTH 10 b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Pull #3
487.5						
	11		S.S., sly., f.g. m.h., m. gr. w/oc. CLS/SLS lenses hor.ptgs (max 0.4) 10.6-12.7 w/cly coz.		11.0	START 11:58
						End 12:08
						Time 10
						Drl 10
	12					Ran 4.6
						REC 4.7
						LOSS Ø
						unacc Ø
	13				4	
	14					
483.4					14.5	TI Depth 14.3 TP Depth 14.5
	15		CLS/SLS, shy., S., dk.gr. w/cl. coz. ptgs.			Pull #4
						START 7:35
482.4						End 7:45
	16		SS., ve. sly., f.g., m.h. w/shy SLS. zos.			TIME 10
						Drl 10
					5	RAN 5.1
	17					REC 4.7
						LOSS Ø
						unacc Ø
	18				18.1	
479.2	19		SLS., m.h., m.gr., sly. dng. SlK. ptgs @ 20.3.; shy ptgs (max piece 0.3) grading into		6	TI Depth 19.3 TP Depth 19.5
						Pull #5
	20					START 7:55
						End 8:05
						TIME 10
	21					Drl 10
						RAM 3.9
						REC 4.3
						LOSS Ø
	22		(Cont)		21.8	unacc Ø (Cont)

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PROJECT Gallipolis Lock + Dam			**INSTALLATION** ORH-CD			**SHEET** 3 **OF** 4 **SHEETS**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
425.7	22					
	23		CLS., gr, S. Ve.S., (max piece 0.2) hyx cl. CO2. / fld ptgs			TI, Depth 23.4
					7	TP Depth 23.6
	24					Pull # 6
						START 8:12
						End 8:23
	25					Time 11
						Drl 11
						Ran 5.2
						Rec 5.0
422.7					25.4	Loss 0
	26		ICL. gr. r. br, bkn, slk, S.			unacc 0
	27				8	
	28					
	29				29.1	TI & TP Depth 28.6
						Pull # 7
	30					START 8.27
						End 8.38
						TIME 11
						Drl 11
	31				9	Ran 5.0
						Rec 5.0
						Loss 0
	32					unacc 0
	33				32.9	
463.4 34			CONT			TI & TP Depth 33.6

ENG FORM 1836-A
JUN 67

GPO 1969 OF—329-243

PROJECT Gallipolis Lock + Dam **HOLE NO.** R-95-2

PROJECT GALLIPOLIS LOCK + DAM

INSTALLATION ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34				10	Pull # 8
						START 8:40
463.4			BOTTOM HOLE.		34.7	End 8:50
	35					Time 10
						Drl 10
						Ran 1.3
						REC 1.1
						Loss ⊘
						unacc ⊘
						TI Depth 34.6
						TP Depth 34.9

DRILLING LOG	DIVISION ORD		INSTALLATION ORH -CD			Hole No. R 28 11 SHEET 1 OF SHEETS

1. PROJECT Gallipolis Lock

2. LOCATION (Coordinates or Station) mono STA. 14+26 "B"

3. DRILLING AGENCY W.G Jaques

4. HOLE NO. (As shown on drawing title and file number) R-28/1

5. NAME OF DRILLER A. Tice

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 - 492.8

8. DEPTH DRILLED INTO ROCK 43.8

9. TOTAL DEPTH OF HOLE 448.0

10. SIZE AND TYPE OF BIT 4 X 5⅝"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12-7-88 | COMPLETED 12/7/88

17. ELEVATION TOP OF HOLE 492.8

18. TOTAL CORE RECOVERY FOR BORING 43.8

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
491.9	1		SS. lt gr. mod hd. med f g.			START 11 7 Pull #1 End 11.22 Time 15 Drl 15 Ran 2.0 Rec 2.0 Loss 0
	2		ICL. r. br, s to v.s., Mot. w/g + gr.g. cl -lt.g :491.9 490.3 + fatty @ 491.9 -491.8 mech bkn. @ 490.8-490.6 Poss. Loss		1	ILE In 2.0
	3					START 12.8 Pull #2 End 12.35 Time 10 Drll 10 Run #2.2 2.4 Rec 1.4 Loss 0.8 Unacc 0.8
488.6	4			3.2		TD Depth 4.2
	5		SLS: g. to gn gr. soft. to mod hd. grad. w/ sh @ top to s @ bottom sev mech bkn w/loss 488.6 - 488.0, 486.1-485.8 slk 486.1-485.7 hi ang break @ 486.9 to 486.6 Clay seam @ 481.8, 479.4 f.g. ss intbdd w/SLS below 480.7 CL. seam 477.1 -477.0 bkn w/cl coating 476.5 476.6			Ti Depth 4.4 START 12.48 End 1.02 Time 14 Drl 14 Ran 2.8 3.0 Rec 0.5 Unacc 0.5
	6				2	
	7			7.6		TD Depth 7.0 Ti Depth 7.4
	8					START 1.16 Pull #4 End 1.36 Time 20 Drl 20 Ran 3.9 Rec 4.0 Loss 0 Unacc 0
	9				3	
	10					
	11			11		Ti Depth 11.0 Type Depth 10.9 START 1:51 Pull #5 End 2:07 Time 16 Drl 16 Ran #.34 8.3 Rec 0 Unacc 0
	12					
	13				4	
	14					
	15			14.4		Ti Depth 14.6 TP Depth 14.7 START 2:36 Pull #6 End 3:12 Time 36 Drl 22 Ran # 9.2 9.3 Rec 9.2 Loss
	16				5	
475.8	17					
	18		SS gr. to lt gr. mod. hd. Med to f. gr. mic, gr. contact w/SLS, c w/depth occ xbdd. bkn pl w/cl Coating 476.0 - 473.7 475.4, 474.8, 462.5? 471.0? c small amount	17.6		
	19				6	
	20				(cont)	

PROJECT Gallipolis Lock & Dam			INSTALLATION ORH - CD			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21				6	
	22				22	
	23					
	24				7	TP Depth 23.6
						TI Depth 22.9
						Pull # 7
						START 7:35
	25				25.5	End 7:55
						Time 20
						Drl 20
	26					Ran *6.7
						Rec 6.9 6.9
	27					Loss 0
						Unacc 0
	28				8	
	29				29.2	
	30					TP Depth 30.2
	31				9	TI Depth 30.8
						Pull #8
						START 8:14
	32				32.7	End 8:30
						Time 16
	33					Drl 16
						Ran 8.8
	34					Rec 8.9
						Loss 0
	35				10	unacc 0
	36				36.4	
	37					
	38					
	39				11	TP. 39.0
	40				40.0	TI Depth 39.6
						Pull #9
						START 8.52
	41					End 9:03
						Time 11
						Drl 11
	42				12.	Ran *4.6 6.9
						Rec 4.2
						Loss 0
	43					unacc 0
449.2 449.0					43.6	TP Depth 43.6
						TI Depth 46.5

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 5 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4 X 5½"

2. LOCATION (Coordinates or Station) mono. R29 STA. 13.94 "B"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W. G. Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL B 53 Mobile

4. HOLE NO. (As shown on drawing title and file number) R 28/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER A. Tice

14. TOTAL NUMBER CORE BOXES 9

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12-6-88 | COMPLETED 12/16/88

7. THICKNESS OF OVERBURDEN 0 - 492.6

17. ELEVATION TOP OF HOLE 492.6

8. DEPTH DRILLED INTO ROCK 43.6

18. TOTAL CORE RECOVERY FOR BORING 43.6 %

9. TOTAL DEPTH OF HOLE 43.6

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
492.6	1		SS lt gr. mod hd. med. to f gn. sli mic nve sh frage. blow 491.4			Pull #1 START 12:50 LOSS -02 End 1:16 unacc 0.2 Time 26 Drl 26 Ran 2.4 Rec 2.4
490.5	2				1	Tl&TP Depth 2:4
	3		ICL r br., s. mot. w/q & gr. CL.			Pull #2 START 1:30 LOSS 0.2 End 1:43 unacc 0.2 Time 13 Drl 13 Ran 1:3 TP Depth 3.7 Rec 1:6
	4			3.7		Tl Depth 4.2
487.3	5				2	Pull #3 START 2:05 End 2:19 Time 14 Drl 14 Ran 2.3 TP Depth 5.5 Rec 1.3 Loss 0 unacc 0
	6		S.S. interbedded H. q: 490.5 to 489.7 faHy CL 490.5 490.1			Tl Depth 6.5
	7		SLS.q. to gn.gr.S to med hd. gradational w/ sl @ top	6.9		Pull #4 START 2:37 Ran 1.2 TP Depth 6.8 End 2:45 REC 1.3 Time 8 Loss 0 Drl 8 unacc 0
	8		to sandy @ bottom, Sandy below 484.3 CL.: 487.1- 486.9		3	Tl Depth 7.3 Pull 5 START 3pl End 3:16 Time 15 Drl 15 Ran 3.9 Rec 4.1 Loss 0 unacc 0
	9		Slk 486.9 Cl. seam @ 478.8, ~ 0.05 thick			
	10		SS f q inbdd. below 482.8 gradational (mich) bk @ 478.5- 478.7			
	11			10.6		TP Depth 10.6 Tl Depth 10.9 Pull #6 START 3:31 End 3:46 Time 15 Drl 15 Ran 3.4 Rec 3.2 Loss 0 Unacc 0
	12				4	
	13					
	14			14.1		TP Depth 14.1 Tl Depth 14.0 Pull #7 START 7:15 End 7:42 Time 27 Drl 2.7 Ran 5.0 Rec 5.0 Loss 0 Unacc 0
	15				5	
	16					
475.2	17			17.7		
	18		S.S.			
	19				6	Tl Depth 19.1 TP Depth 19.0
	20		(CONT)	(CONT)	(CONT)	(CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam

HOLE NO. R 28/2

PROJECT Gallipolis Lock & Dam				INSTALLATION ORH - CD		SHEET 2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21		SS. g. to lt g.; mod hd. med to f. gr. mic., occ x bdd, gradational contact. with SLS, coarser w/depth. H. F staining @ 465.7 mech bkn.(rounded) 463.7 463.5		21.2	Pull #8 START 8:12 END 8:55 TIME 23 Drl 23 Ran 9.9 Rec 9.8 Loss 0 unacc 0
	22					
	23				7	
	24					
	25				24.7	
	26					
	27				8	
	28					
	29				28.3	T/ Depth 28.0 TP Depth 28.9
	30				9	Pull #9 START 9.02 End 9.23 Time 21 Drl 21
	31					Ran 9.5
	32				31.5	Rec 9.5 Loss 0 Unacc 0
	33					1
	34				10	"
	35					
	36				35.1	
	37				11	
	38					
	39				38.4	TrDepth 38.5 TP Depth 38.5
	40				12	Pull # 10 START 9:49 End 9:59 Time 10 Drl 10 Ran 7.1
	41					Rec 7.1
	42				42.2	Loss 0 Unacc 0
	43				13	
	44		(CONT)			(CONT)

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				ELEVATION TOP OF HOLE			Hole No. 28/2	

DRILLING LOG (Cont Sheet) — ELEVATION TOP OF HOLE **492.6** — Hole No. **28/2**

PROJECT: Gallipolis Lock & Dam

INSTALLATION: ORH-CD

SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	45				13	
447.1			Bottom Hole		45.2	
	16					Tr. Depth 45.6 TP Depth 45.5
	47					

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PROJECT Gallipolis Lock & Dam

HOLE NO. R28/2

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DRILLING LOG	DIVISION ORD			INSTALLATION ORH-CD			SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4" x 5½"

2. LOCATION (Coordinates or Station) Mono R29/1 STA. 13+84 "B"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

3. DRILLING AGENCY W. G. Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL B-57

4. HOLE NO. (As shown on drawing title and file number) R 29/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

5. NAME OF DRILLER DAVE HARPER

14. TOTAL NUMBER CORE BOXES 13

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12-5-88 COMPLETED 12-5-88

7. THICKNESS OF OVERBURDEN 493.4

17. ELEVATION TOP OF HOLE 493.4

8. DEPTH DRILLED INTO ROCK 44.4

18. TOTAL CORE RECOVERY FOR BORING 44.4

9. TOTAL DEPTH OF HOLE 44.4

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	1		SS lt gr mod hd med to f. g small sh. frag. thru. out sh. len. 493.0 - 492.5			Pull #1 START 1.05 End 1.28 Time 23 Drl 23 Ran 3.2 Rec 2.6 Loss 0.6 unacc 0.6
490.7	2				1	
	3		ICL. r. bn. s. mot w/ gr. & gn gr. cl lt. gr. fatty cl. 490.7 - 490.6			TI & TP Depth 3.2 Pull #2 START 9.47 End 1.52 Time 5 Drl 5 Ran 2.2 Rec 2.2 Loss 0 unacc 0 TP 5.8
488.6	4				4.0	
	5		SLS. gr to gn. gr. 6 to. mod hd. grad. hd. sh. @ top to. s. @ bot. BKn 488.0 - 486.9 SlK 488.0 - 487.4 S. blow 483.7 redrl 483.7 - 482.7 Sh. & lt. bKn @ 478.2 477.3 - 477.1		2	TI Depth 5.4 Pull #3 START 2.04 Ran 1.1 End 2.10 Rec 1.1 Time 6 Loss 0 Drl 6 unacc 0 TP 6.5 TI Depth 9 Pull #4 START 2.20 End 2.28 Time 8 Drl 8 Ran 3.2 Rec 3.2 Loss 0 unacc 0
	6					
	7				7.4	
	8				3	
	9					
	10					TP 9.7
	11					TI Depth 10.6 Pull #5 START 2.38 End 3.00 Time 22 Drl 22 Ran 7.3 Rec 7.8 Loss 0 unacc 0
	12				4	
	13					
	14					
	15					
477.3	16				19.8	
	17		SS. gr to lt gr. mod hd. med to f g. gn. cont. w/ SlK mic occ. x-bdd Jt 30° ang @ 477.2 - 477.0 t bard. of Biotite, mica @ 451.5 449.5 - 499.3 (mic bdd pl)		5	TI Depth 17.2 TP 17.0 Pull #6 START 7.43 End 8.08 Time 25 Drl 25 Ran 10.0 Rec 10.0
	18					
	19				18.4	
	20		(Cont)		6	(Cont)

				ELEVATION TOP OF HOLE 493.4			Hole No. R 29/1	

PROJECT Gallipolis Lock & Dam   INSTALLATION ORH - CD   SHEET 2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SANDSTONE			
	21				6	
	22				22.1	
	23					
	24				7	
	25					
	26				25.3	
	27					Ti Depth 27 IP 26.9
						Pull #7
	28				8	START 8:40
						End 9:17
	29					Time 37
					29.3	Drl 37
	30					Ran 9.8
						Rec 10.0
	31					Loss 0.2
						unacc 0
	32					
	33				33.0	
	34					
	35					
	36					
	37				36.7	Ti & TD Depth 36.8
						Pull #7
	38					Start 9:50
						End 10:23
	39					Time 33
						Drl 33
	40					Ran 9.0
						Rec 9.0
	41				40.4	Loss 0
						unacc 0
	42					
	43					
	44				44.0	

ENG FORM 1836-A (ER 1110-1-1801) GPO 1980 OF - 828 - 603   PROJECT Gallipolis Lock & Dam   HOLE NO. R-29-1.

	ELEVATION TOP OF HOLE					Hole No.	R 29/1
			493.4				

PROJECT Gallipolis Locks & Dam   INSTALLATION ORH-CD   SHEET 2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	45				13	
	46				46.0	Tl. Depth 459 TP 45.8
447.4	47		Bottom Hole			
	48					
	49					
	50					

PROJECT Gallipolis Lock & Dam   HOLE NO. R29-1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD -	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4 x 5 1/2
2. LOCATION (Coordinates or Station) W/en. 29 Sta. 13+52 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL
3. DRILLING AGENCY W. G. Jaques	12. MANUFACTURER'S DESIGNATION OF DRILL B 53 Mobile
4. HOLE NO. (As shown on drawing title and file number) R 29/1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED NA UNDISTURBED NA
5. NAME OF DRILLER DAVE HARPER	14. TOTAL NUMBER CORE BOXES 12
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER NA
	16. DATE HOLE STARTED 12-2-88 COMPLETED 12-5-88
7. THICKNESS OF OVERBURDEN 493.7	17. ELEVATION TOP OF HOLE 493.7
8. DEPTH DRILLED INTO ROCK 44.7	18. TOTAL CORE RECOVERY FOR BORING 44.7 %
9. TOTAL DEPTH OF HOLE 44.7	19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
492.3	1		SS lt.gr. mod hd., med to f.g. mic. bkn., @ 493.1-492.8.			Pull #1 START 2.00 End 2.21 Time 21 Drl 21 Ran 3.2 Rec 2.3 Loss -0.9 unacc 0.9
	2		ICL r.br. s. mot. lt. gr. a gr. cl. ll. 492.3. 491.8 mech.bkn. 490.5. 490.1		1	
	3					TI & TP Depth 3.2
	4				4.2	Pull #2 START 7.45 Loss 0.6 End 8:02 unacc 0.6 Time 17 Drl 17 Ran 2.7 Rec 2.1
488.4	5					
	6		SLS gr. to. gn. gr. s. to med. hd. grad. w/sh. @ top to. sa. @ bottom, occ to nod. above cl. 487.5		2	TI & TP Pull #3 START 820 End 8:31 Time 11 Drl 11 Ran 3.9 Rec 3.8 Loss 0 unacc 0 TP 8.7
	7		mech. spin loss: 488.4, 488.1 487.8, 486.1. bkn.			
	8		bkn. 486.5-486.3., 485.4 485.0, 479.0. 478.7 bkn. pl. ~0.4		8.3	
	9		'open jt. thr. out cl. Seams 480.4. 486.2. 478.1-479.0 re. drill 480.4-480.1			
	10				3	TI Depth 9.8 Pull #4 START 8.50 End 9.05 Time 15 Drl 15 Ran 3.6 Rec 3.6 Loss 0 unacc 0
	11					
	12				11.7	
	13					TI & TP Depth 13.3
	14				4	Pull #5 Start 9:32 End 9:43 Time 32 Drl 22 Ran 4.7 Rec 4.7 Loss 0 unacc 0
	15				15.3	
477.5	16					
	17		SS gr. to. lt. gr mod. hd. f. to med. gn. grad. con. w/SLS mic. mech. bkn.		5	
	18		466.2. 459.9. spin loss 476.2 bkn w/ poss cl. coating 457.c bkn. pl with spacing 0.2.			TI Depth 18.0 TP 18.2
	19		456.5 - 447.4 (2.9.'Loss)		18.7	Pull #6
					6	

| PROJECT Gallipolis Lock & Dam | | | | INSTALLATION ORH-CD | | | SHEET 2 OF 3 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21		SANDSTONE		6 / 21.0	Pull # 6 / Start 10.20 / End 10.34 / Time 14 / Drl 14 / Ran 4.5 / Rec. 4.8 / Loss 0 / Unacc 0 TP. 22.5
	22					
	23				7	Tl Depth 23.2 / Pull # 7
	24				24.4	Start 10.47 / End 11.01 / Time 14 / Drl 14 / Ran 5.0
	25					Rec 5.0 / Loss 0 / unacc 0
	26				8	
	27					
	28				28.1	TP. 27.5 / Tl Depth 28.0 / Pull # 8
	29					Start 12.30 / End 2:18 / Time 1.48 / Drl 18 / Ran 3.8 / Rec 2.7
	30				9	Loss 0.8 / unacc 0.8
	31					
	32				31.6	TP 31.3 / Tl Depth 31.9 / Pull # 9
	33					Start 2.42 / End 2.57 / Time .15 / Drl 15. / Ran 5.9
	34				10	Rec 5.0 / Loss -0.9 / unacc 0.9
	35				35.5	
	36					
	37				11	TP 37.2 / Tl Depth 37.4 / Pull # 10
	38					Start 8:00 / End 9:00
	39				39.2	Time 1 hr / Drl 1 hr / Ran 9.2
	40					Rec 6.3
	42				12	Loss -2.9 / unacc -2.9
	43				42.8	
	44				13	
449.0						

PROJECT							SHEET 2
Gallipolis Lock & Dam			INSTALLATION ORH-CD				OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
					45.3	Pull #10
447.4	46		BOTTOM HOLE			
	47					TP 46.8
						T. Depth 46.8

DRILLING LOG	DIVISION ORD		INSTALLATION O.R.H. - CO		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) mon R30 sta. 13+42 "B"

3. DRILLING AGENCY W-G Jaques

4. HOLE NO. (As shown on drawing title and file number) R30

5. NAME OF DRILLER A. Tice

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 495.2

8. DEPTH DRILLED INTO ROCK 35.2

9. TOTAL DEPTH OF HOLE 35.2

10. SIZE AND TYPE OF BIT 4 x 5 1/2"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL "B" 57

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED NA UNDISTURBED NA

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER NA

16. DATE HOLE STARTED 12-2-88 COMPLETED 12/2/88

17. ELEVATION TOP OF HOLE 495.2

18. TOTAL CORE RECOVERY FOR BORING 35.2 %

19. SIGNATURE OF INSPECTOR mike neal ET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
495.2	1 2 3 4		SS lt. gr. med hd. med f gr. mic. sh scam w/cl coating @ 494.4 - 494.3 Cl coated frac. 494.0 492.5 lt. bkn. sh. bdd @ 491.3-491.1		1 3.5	Pull #1 START 8:45 End 9:06 Time 21 Drl 21 Ran 3.0 Rec 3.0 Loss Ø unacc Ø TI & TP Depth 3.0 Pull #2 start 9:45 End 10:13 Time 28 Drl 28 Loss Ø unacc Ø
490.4	5 6 7		INC r. bn. s. occ mot w/g @ gn. gr. cl. occ lt gr. CLS freq., gr. CLS @ 489.7-489.1 Sev. bkn. + washed 490.4-489.7. 489.1		2 7.4	TI & TP 5.0 Pull 3 START 10:45 Loss Ø End 11:12 unacc Ø Time 29 Drl 17 Ran 2.2 Rec 2.2 TP & TP 7/2
489.9	8 9 10 11		SLS. gr. to gn. , s to med hd. gradational w/sh @ top to s @ bottom. occ small slk above 485.3 Se below 485., sh. scam @ 479.5 & 479.1		3 11.1	Pull # 4 START 11:35 End 11:56 Time 21 Drl 21 , Ran 4.0 Rec 4.0 Loss unacc TI & TP Depth 11.1 Pull #5
478.6	12 13 14 15 16				4 14.4 5	START 1.05 End 1.28 Time 23 Drl 23 Ran 49 Rec 49 Loss 0 unacc 0 TP 16.1 TI Depth 16.3
	17 18 19		SS gr. to lt. gr., med hd. f to med .g gradational c. w/ depth. occ x.bdd pl mic., mech. bkn @ 474.4 - 474.2 30° ang. Pl. @ 479.1 to 497.0., Bands 0.04 sh. & Botite mica 459.8 - 459.8		18.1 6	Pull # 6 START 2.00 End 2.35 Time 35 Drl 24 Ran 4.7 Rec 2.6 Loss 2.6 unacc 2.1

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam

HOLE NO. R-30/1

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 495.2

PROJECT Gallipolis Lock & Dam

INSTALLATION

Hole No. R30/1

SHEET 2

OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
			SANDSTONE			
	21					TP Depth 20.9
						TI 21.3
						Pull #7
	22				6	START 9:05
						End 9:14
						Time 9
	23					Drl 9
						Ran 3.2
	24				23.8	Rec 3.0
						LOSS -0.2 TP 24
						unacc -0.2
	25					
	26				7	TI Depth 21.9
						Pull #8
						START 9:45
	27					End 10.00
						Time 15
					27.5	Drl 15
	28					Ran 3.8
						Rec 4.8 TP 28.9
						LOSS 0
	29					unacc 0
						TP Depth 27.9
						Pull #9
	30				8	START 10.42
						End 10.50
						Time 8
	31					Drl 81
					30.9	Ran 2.7
						Rec 3.0
	32					LOSS 0.3
						unacc 0.3
						TP&TI 31.5
	33				9	Pull #10
						START 11:05
						End 11:29
	34					Time 19
						Drl 19
						Ran 4.6
	35				34.4	Rec 4.6
						LOSS 0
						unacc 0
	36				10	
458.2			Bottom Hole		36.4	TI Depth 36.4 TP 36.3
	37					
	38					
	39					
	40					
	41					
	42					

DIVISION ORH				**INSTALLATION** ORH-CD		**SHEET 1 OF 2 SHEETS**

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4r5.5

2. LOCATION (Coordinates or Station) mono R30 Sta. 13+10 "B"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

3. DRILLING AGENCY W G Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL B57 mobile

4. HOLE NO. (As shown on drawing title and file number) R 30/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

5. NAME OF DRILLER A Tice

14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12-8-88 COMPLETED 12-9-88

7. THICKNESS OF OVERBURDEN 496.4

17. ELEVATION TOP OF HOLE 496.4

8. DEPTH DRILLED INTO ROCK 36.4

18. TOTAL CORE RECOVERY FOR BORING 36.4 %

9. TOTAL DEPTH OF HOLE 4.60

19. SIGNATURE OF INSPECTOR Mike Neal

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.4			SS lt. gr. mod hd., med to coarse gr., slightly mic. -mech. bkn. 492.7 492.5			Pull #1
	1					START 1.36
						End 1.55
						Time 19
	2					Drl 19
					1	Ran 4.8
						Rec 4.8
	3					Loss 0
						Unacc 0
	4					
	5				3.7	
						TL Depth 4.8 TP Depth 4.7
						Pull #2
					2	START 2:04 Ran 1.1
490.3	6					End 2:10 Rec 1.3
						Time 6 Loss 0
			Inc. nus. sm. sh. frag. &			Drl 6 TL Depth 5.9
	7		stringer below 492.5			TP Depth 6.1
			ICL r. br., s. mot w/gr		7.2	Pull #3
			& gn gr. CL mech. brn @			START 2.31
	8		490.3 490.2 Ser. bkn @			End 2.48
			488.7 487.4 -487.1			Time 17
						Drl 17
	9				3	Ran 3.8
486.8						Rec 3.8
						Loss 0
						Unacc 0
	10		SLS gr. to gn gr. S to			TP Depth 9.9
			mod. hd. grad. w/ sh.			TL Depth 10:03
	11		@ top to s. @ bottom		10.8	Pull #4
			bkn. 485.6 - 485.5.			START 2.59
	12		sh. lense : 480.5 - 480.3			End 3.31
						Time 32
						Drl 32
	13				4	Ran 8.2
						Rec 8.6
	14					Loss 0
						Unacc 0
	15				14.7	
	16					
479.4	17				5	
			SS. gr. to lt. gr. mod			
	18		hd. med. to f. g. mic.			TP Depth 18.6
			gradational contract		18.4	TL Depth 18.6
	19		w/ SLS, occ. x bdd			Pull #5
			bkn 473-472.9			cont. next page
	20					

PROJECT Gallipolis Lock & Dam   **HOLE NO.** 30/2

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			num. mica bdol. pl. 468.2 468.1			Pull # 5
	21		num. sh. stringers & frag. 964.0 - 463.8		6	START 7:29
						End 8:14
	22				22	Time 45
						Drl 45
	23					Ran 7.4
						Rec 7.3
	24				7	Loss 0
						unacc 0
	25					
	26				25.6	TP Depth 25.5
						TI Depth 25.9
	27					Pull # 6
					8	START 8:32
	28					End 9.04
					28.9	Time 32
	29					Drl 32
						Ran 9.4
	30					Rec 9.3
						Loss 0
	31				9	unacc 0
	32					
	33				32.9	
	34					
	35				10	TP Depth 34.9
						TI Depth 35.9
459.7	36				36.5	Pull #7
						START 9:32 Loss 0
						End 9:40 unacc 0
						Time 8
						Drl 8
	37					Ran 2.0
						TP Depth 37.4
						TI Depth 37.9

DRILLING LOG	DIVISION ORH	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) mono R31 Sta. 12+00 "B"

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-31 / R-31/1

5. NAME OF DRILLER Dale Harper

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 496.9

8. DEPTH DRILLED INTO ROCK 36.9

9. TOTAL DEPTH OF HOLE 36.9

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B 53 mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12-8-88 COMPLETED 12/9/88

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 36.9 %

19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SS. lt. g. mod. med. to O gr., sl. mic. hi ang., cl f.l. frac. @ 496.3 -495.9 Sh. frag. & stringers; @ 490.4 -490.1		1 — 3.4	Pull 1 / START 10.21 end 10.32 Time 11 Drl 11 Ran 4.5 Rec 4.5 Loss 0 Unacc 0 / Ti & TP Depth 4.5
489.9	7				2 — 6.7	Pull #2 START 10.52 End 10.58 Time 6 Drl 6 Ran 2.5 Rec 2.5 Loss 0 unacc 0 / Ti Depth 7.1 TP Depth 7.0
	8		ICL. r.bn, s. to v.s. mat. w/g & gr. g. CL. bk pl. 0'-8" spacing interbdd w/g SLS. below 487.7 sev. bk. @ 487.5 - 487.4.		3 — 10.2	Pull #3 START 11.11 End 11.18 unacc 0 Time 7 Drl 7 Ran 2.2 Rec 2.2 1 Loss 0 / Ti Depth 9.3 TP Depth 9.2
485.9	11					Pull # 4 START 12.15 End 12.25 Time 10 Drl 10 Ran 2.5 Rec 2.4 Loss 0 unacc 0 / Ti Depth 11.6 TP Depth 11.5
	12		SLS. q to gr., g. s to not hd. gradaixal w/ Sh. @ top. to s @ bottom		4 — 13.7	Pull #5 START 12:40 End 12:50 Time 10 Drl 10 Ran 2.5 Rec 2.5 Loss 0 unacc 0 / Ti Depth 14.3 TP Depth 14.0
	13		cl. starts @ 481.7 & 481.6 cl. coated pl. @ 480.8			
479.4	17				5 — 17.3	Pull #6 START 1.09 End 1.25 Time 14 Drl 14 Ran 6.0 Rec 5.7 Loss 0.2 unacc 0.2
	18		SS g. to lt g., mod. med. to f grain, mic. occ x bdd, gradtional contact w/SLS thin Sh. frag. @ 461.3 - 460.0		6	
	20					TP Depth 20.0

PROJECT Gallipolis Lock & Dam HOLE NO. R-31/1

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		ELEVATION TOP OF HOLE	Hole No. R 31/1
PROJECT Gallipolis Lock & Dam		496.9	
		INSTALLATION ORD	SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SANDSTONE			Tl Depth 20.3
	21					Pull # 7
					21.2	START 1:42
	22					End 1:56
						Time 14
						Drl 14
	23				7	Ran 9.0
						Rec 9.0
	24					Loss 0
						unacc 0
	25				24.7	
	26					
	27				8	
	28					
					28.3	
	29					TP Depth 29.0
	30				9	Tl Depth 29.3
						Pull # 8
	31					START 2:16
						End 2:32
	32				31.5	Time 16
						Drl 16
	33					Ran 9.6 10.0
						Rec 9.6
	34				10	Loss 0
						Unacc 0
	35				35.1	
	36					
460.0	37		Bottom Hole			
	38					
	39					Tl Depth 38.6
	40					TP Depth 39.6
	41					
	42					
	43					

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PROJECT Gallipolis Lock & Dam	HOLE NO. R 31/1

DRILLING LOG

DIVISION	ORD
INSTALLATION	ORH-CD

1. PROJECT	Gallipolis Lock & Dam
10. SIZE AND TYPE OF BIT	4½ L
2. LOCATION (Coordinates or Station)	Mono R-31 STA 12+59 "B"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	M.S.L
3. DRILLING AGENCY	W. G. Jaques
12. MANUFACTURER'S DESIGNATION OF DRILL	"57-"B"
4. HOLE NO. (As shown on drawing title and file number)	R 31-2
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED: Na / UNDISTURBED: Na
5. NAME OF DRILLER	A. Tice
14. TOTAL NUMBER CORE BOXES	13
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.	15. ELEVATION GROUND WATER	Na
	16. DATE HOLE — STARTED: 12-9-88 / COMPLETED: 12/9/88
7. THICKNESS OF OVERBURDEN	496.9	17. ELEVATION TOP OF HOLE	496.9
8. DEPTH DRILLED INTO ROCK	36.9	18. TOTAL CORE RECOVERY FOR BORING	36.9 %
9. TOTAL DEPTH OF HOLE	36.9	19. SIGNATURE OF INSPECTOR	JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SS lt gr med to c., g. slightly mic. acc. x-bdd nus. t. sh stringer & frag. 490.5 - 489.2'		1	Pull #1 — START 10:35, End 10:48, Time 13, Drl 13, Ran 4.7, Rec 4.7, Loss 0, Unacc 0
	1-7				37	Tl Depth 4.9 TP 4.7
					2	Pull #2 — START 1100, End 1105, Time 5, Drl 5, Ran 3.1, Rec 2.9, Loss 0.2, Unacc 0.2
489.2	8		ICL r. br., s. mot, w/ gr. & gn. gr. cl mech. bkn. 489.2 - 488.9	7.3		Tl Depth 8.1 TP 7.8
					3	Pull #3 — START 11.17, End 11.34, Time 27, Drl 27, Ran 3.4, Rec 3.1, Loss 0.3, Unacc 0.3
486.9	10		SLS. gr. to gn. gr. s. to mod. hd. grad. w/ sh. @ top to s. @ bottom mach. bkn. @ 485.7 - 485.6 mach. bk. & spin 484.7 - 484.0 f. g. SS 482.2 - 481.0 bkn. sh. 481.0 - 480.6	10.9		TP 11.2
	11-13			14.3	4	Tl Depth 12.9
						Pull #4 — START 12.19, End 12.44, Time 25, Drl 2.5, Ran 7.7, REC 7.7, Loss 0, Unacc 0
	14-17				5	
				17.9		
478.5	18				6	Tl Depth 19.0 TP 18.9
	19				(Cont)	Pull #5 (Cont)
			Cont next sheet			

DRILLING LOG (Cont Sheet)   ELEVATION TOP OF HOLE **496.4**   **Hole No. R 31/2**

PROJECT **Gallipolis Locks & Dam**   INSTALLATION **ORH-CD**   SHEET **2** OF **2** SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21		SS. gr. to lt gr. med hd. med to f. g. mic. occ x-bdd		6	Pull #5
			Num t. bands of		21.4	START 12.55
	22		Biolite mic bdd pl.			End 1.32
			459.4. 459.3. 458.6			Time 37
	23		458.2			Drl 37
	24				7	Ran 9.8
						Rec 9.9
	25					Loss 0
					25.3	Unacc .0
	26					
	27				8	
	28					
	29				28.8	Tl Depth 28.9 TD 28.7
	30					Pull #6
						START 1.59
	31					End 2.12
					9	Time 21
	32					Drl 21
					32.6	Ran 10.0
	33					Rec 9.9
	34					Loss 0
						Unacc 0
	35				10	
	36					
460.0	37				36.4	
	38				11	
458.2	39		Bottom Hole		38.7	Tl Depth 38.9 TD 38.7
	40					
	41					
	42					
	43					

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PROJECT **Gallipolis Lock & Dam**   HOLE NO. **R 31/2**

DRILLING LOG	DIVISION ORD			INSTALLATION CRH		SHEET 1 OF SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Sta -12+44 B

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-32/1

5. NAME OF DRILLER A. Tice

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.9

8. DEPTH DRILLED INTO ROCK 36.9

9. TOTAL DEPTH OF HOLE 36.9

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL "B" 53

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12-9-88 COMPLETED 12/5/88

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 36.9 %

19. SIGNATURE OF INSPECTOR Mike Neal / ET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			<u>SS</u> lt. gr. mod hd. f. to ss med g. slightly mic, occ. coarse gn.		1	Pull #1 START 7.25 End 7.45 Time 20 Drl 20 Ran 5.1 Rec 4.6 Loss 0 unacc 0
	1					
	2					
	3					35
	4					
	5					TP Depth 4.6 TL Depth 5.1
	6				2	Pull #2 START 7.51 End 8:03 Time 7 Drl 7 Ran 2.8 Rec 2.9 Loss 0 unacc 0
	7				6.9	
489.4			CL scam @ 489.4 ICL, r. br, s mot. w/g & gr. g. cL. lt. g. fatty cL. 489.4 - 489.1		3	TL Depth 7.7 TP 7.5 Pull #3 START 8.36 End 8.47 Loss 0.2 Time 11 unacc 0.2 Drl 11 Ran 2.3 Rec 2.0
	8					
	9					
487.4					10	TL Depth 9.8 TP 9.2 Pull #4 START 9:05 End 9:02 Time 15 Drl 15 Ran 3.2 Rec 2.7 Loss 0.5 unacc 0.5
	10		SLS g. to gr. g. S to med. hd. gradational w/ sh @ top to sandy @ bottom. sev mac. bkn 487.2 - 486.9 w/ poss loss bkn pl w/ spin loss 485.9 485.5 cL scam @ 482.6		4	
	11					
	12					
	13				13.8	TL Depth 13.0 TP 12.9 Pull #5 START 9:40 End 10.01 Time 21 Drl 21 Ran 4.6 Rec 4.8 Loss 0 unacc 0
	14					
	15					
	16				5	
	17				17.5	TP 17.5 TL Depth 17.8
480.5	18					Pull #6
	19		SANDSTONE		6	
	20		(cont)	(cont)	(cont)	(cont)

PROJECT: Gallipolis Locks & Dam   INSTALLATION: ORHCD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21		SS gr. to. lt gr, mod hd., f to med g, mica., occ x bedded, gradational contact w/ SLS.	20.8		Pull # 6
	22				7	Start 10.23 / End 10.46 / Time 23 / Drl 23 / Ran 10.0 / Rec 9.9 / Loss 0 / unacc 0
	23		CL coated angled pl, 30° @ 476.9 to 476.8			
	24		white nodual (poss Cal ?) @ 468.5		24.5	
	25					
	26					
	27				8	TP 27.5
	28				28.1	TL Depth 27.7
	29					Pull # 7 / Start 11:06 / End 11:26 / Time 20 / Drl 20 / Ran 10.0 / Rec 9.9
	30				9	
	31				31.7	Loss / unacc
	32					
	33					
	34					
	35				35.2	
	36					
460.0	37					
459.4			Bottom Hole		37.5	TL Depth 37.7 TP Depth 37.5
	38					
	39					
	40					
	41					
	42					
	43					

DRILLING LOG

DIVISION	INSTALLATION
ORD	ORH

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) STA 12+10 "B"

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R 32/2

5. NAME OF DRILLER Dave Harden

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 496.3

8. DEPTH DRILLED INTO ROCK 36.5

9. TOTAL DEPTH OF HOLE 38.

10. SIZE AND TYPE OF BIT 4 x 5 1/2

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL "B" 57 mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED NA — UNDISTURBED NA

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER NA

16. DATE HOLE STARTED 12-9-88 COMPLETED 12-10-88

17. ELEVATION TOP OF HOLE 496.3

18. TOTAL CORE RECOVERY FOR BORING 36.3 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5			SS lt. gn, mod. hd, med. c.g. occ thin sh stringer		1	Pull #1 START 3:04 END 8:10 Time 6 Drl 6 Ran 4.1 Rec 4.1 Loss 0 unacc 0
	1-6			3.7		TI & TP Depth 4.1
489.9	6				2	Pull #2 START 3.26 LOSS 0 END 3.30 unacc 0 Time 4 Drl 4 Ran 2.5 Rec 2.3 TP Depth 6.4 TI Depth 6.3
	7		INC r - br, s. mot. w/ gn + gn.gr, cl, lt. gr : 489.9 - 489.3	7.0	3	Pull #3 START 7:31 unacc 0 END 7:40 Time 9 Drl 9 Ran 2.6 Rec 2.6 Loss 0 TI & TP Depth 9.0
486.8	9					Pull #4 START 8:10 END 8:45 Time 35 Drl 3.5 Ran 9.0 Rec 8.8 Loss 0.2 unacc 0.2
	10-13		SLS .gr to gn. gr., s to mod. hd. gradational w/ sh & top to s @ bottom Sev bkn w/ angled plan's (-45°) slicksides 480.8 -480.3 (poss fault, poss loss) mod bkn 478.7 - 478.5	10.2	4	
	14			14.0		
	15-17				5	
	17			17.6		
	18					TP Depth 18.0
477.3	19		SANDSTONE (cont)	(cont)	6	TI Depth 18.8 PULL #5 CONT

PROJECT						
Gallipolis Lock & Dam				INSTALLATION ORH - CD		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21		SS, gr. to lt gr, f to med g mic, occ, x bedded gradational contact w/ SLS		6 / 21.1	Pull #5 START 9:31 End 9:48 Time 17 Drl 17 Ran 7.5 Rec 7.5 Loss 0 Unacc 0
	22		mech spin loss @ 473.4 470.8			
	23		mech, broken: 471.2 470.8		7	
	24		Dia loss due to re-drilling 461.1 - 460.8			
	25				24.8	
	26		Redrilled 464.8 - 460.8			TI Depth 25.8 TP Depth 25.5
	27		H Colored stringers (pors. Calcareous) @ 459.0		8	Pull #6 Start 10:00 10:15-10:56 End 11:01 Time 1hr & 1min
	28				28.3	Drl 20 Ran 6.0 Rec 5.6 Loss 0.4 unacc 0.4
	29					
	30				9	
	31					
	32				32.1	TP Dept .31.5.
	33					
	34				10	
	35					
460.0	36				36.0	T, Depth 35.7 Pull # 7 START 11:30 End 11:36 Time 6
	37				11	Drl 6 Ran 6.0 Rec 6.5
458.3	38		Bottom Hole		38.0	Loss 0 unacc TP Depth 37.5 TI Depth 38.2
	39					
	40					
	41					
	42					
	43					

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PROJECT Gallipolis Lock & Dam

HOLE NO. R 32.2

DRILLING LOG	DIVISION OAD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) STA 12+15 "B"

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R33/1

5. NAME OF DRILLER A. Tice

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 497.1

8. DEPTH DRILLED INTO ROCK 460.0

9. TOTAL DEPTH OF HOLE 37.1

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL B"53"

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12-9-88 COMPLETED 12-10-88

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 32.1 %

19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1	1 2 3 4 5 6 7		SS lt. gr. mod hd. med. to coarse g, sli'ly mica. Sli mech. bkn.@ 472.5 472.3 Num thin sh. stringers & frage. 492.0 -491.8, 489.7-489.4 f. gn.@ 491.8-491.3 490.7-490.5 ang. pl 30°@ 490.7 490.7-490.5		1 3,4 2 7.0	Pull #1 START 12:40 END 12:55 TIME 15 Drl 15 Ran 4.8 Rec 4.6 LOSS 0.2 Unacc 0 TI&TP Depth 4.8 Pull #2 START 1:05 END 1:13 TIME 8 Drl 8 Ran 3.3 Rec 3.6 Loss +0.2 Unacc 0
489.0	8 9 10		ICL. r br. s. mot. w/gr. & gn. g. cl. lt. g fatty Cl 489.0-488.7 -g SLS 487.1 487.0		3 10.2	TI Depth 8.2 TP 8.1 Pull #3 START 1:30 Loss 0 End 1:43 Unacc 0 Time 13 Drl 13 Ran 2.0 Rec 2.0 TI Depth 10.8 TP Depth 10.2
486.9	11 12 13 14 15 16 17 18		SLS. g to gn. gr., s. to mel. hd. gradational w/ sh. @ top to sandy @ bottom Sev. Mec. bkn. 486.9-486.6 thin cl, seams @ cl Coated pl. w/ sp. 0.2' apart. 484.3-483.7 bkn.480.2-480 f. g. SS 483.7-480.7 t. cl. scam 478.7		4 13.7 5 17.4	Pull #4 START 2.07 End 2.21 Time 14 Drl 14 Ran 4.1 Rec 4.0 LOSS 0 Unacc 0 TP Depth 14.2 TI Depth 14.5 Pull #5 START 2.34 End 2.51 Time 17 Drl 17 Ran 4.8 Rec 4.8
478.0	19 20				6	TP Depth 19.0 TI Depth 19.7

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE. MAR 71 (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam

HOLE NO. R33/1

					SHEET 2
PROJECT Gallipolis Lock & Dam			INSTALLATION OAR-CD		OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SS gr. to lt gr, mod hd. med to f. g, mic, gradational Cont. w/ SLS		6 20.6	Pull # 6
	21					START 3.08
						End 3.24
	22		thin sh. stringens @ 472.8 -		7	Time 16
			472.6 nus. mic. bding			Drl 16
	23		Pl. w/occ Fe noduals			Ran 9.8
			466.8 - 466.4			Rec 9.8
	24					Loss -0-
					24.4	unacc 0
	25					
	26					
	27				8	
	28				28	
	29					Tl. Depth 28.8 TP 28.8
	30				9	Pull # 7
						START 7:35
	31					End 7.51
						Time 16
	32				31.8	Drl 16
						Ran 9.9
	33					Rec 9.9
	34				10	Loss -0-
						unacc -0-
	35				35.7	
	36					
460.	37				11	
458.4	38		Bottom Hole			
	39				38.7	TP Depth 38.7
						Tl Depth 39.2
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO 1965 OF—329-242

PROJECT Gallipolis Lock & Dam	HOLE NO. R 33/1

DIVISION	INSTALLATION	SHEET /
ORD	ORH - CD	OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4 X 5½"

2. LOCATION (Coordinates or Station) STA 11+40 "B"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W. G. Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL "B" 57

4. HOLE NO. (As shown on drawing title and file number) R 33/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER DAVE HARPER

14. TOTAL NUMBER CORE BOXES 11

6. DIRECTION OF HOLE

☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER NA

16. DATE HOLE STARTED 12-10-88 | COMPLETED 12-12-88

7. THICKNESS OF OVERBURDEN 496.8

17. ELEVATION TOP OF HOLE 496.8

8. DEPTH DRILLED INTO ROCK 36.8

18. TOTAL CORE RECOVERY FOR BORING 36.8 %

9. TOTAL DEPTH OF HOLE 36.8

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			SS lt.gr. mod. hd., med. to c.g. sli mio mech. bkn. 492.2-491.7 Num thin sh, stringers & frag 490.2 -491.7		1	Pull #1 START 12.55 End 1:01 Time 6 Drl 6 Ran 4.6 REC 4.6 Loss 0 unacc 0
				3.7		
	5				2	TP & TI Depth 4.6 Pull #2 START 1:30 Loss 0 End 1:35 unacc 0 Time 5 Drl 5 Ran 2.6 Rec 2.6
489.6	7			7.2		TP 7.2 TI Depth 7.5
	8		INC. r. br., s mot. w/q & gn. cl. Hgr 489.6-489.0		3	Pull #3 START 1:43 Loss 0.3 End 2:00 unacc 0.3 Time 17 Drl 17 Ran 4.0 Rec 4.0
486.4	10			10.9		
	11		SLS. gr. to gn. gr. s to mod. hd. gradational w/sh @ top to. s@ bottom bkn w/ SIk & ang. pl. in 45° Ang. frac @ 30° 484.9 . 484.8 Cl scam @ 483.6		4	TI Depth 11.5 TP 11:2 Pull #4 Start 2:08 End 2:39 Time 31 Drl 31 Ran 8.2 REC 8.3 Loss 0 unacc 0
482.4	14			13.9		
	15		SS lt.g., mod.hd. f. gi		5	
478.6	18			17.6		
	19		SLS. gr. s. to med. hd. s. below 476.6 sli bkn. @ 478.1 - 478.0		6	TI Depth 19.7 TP 19.5

	ELEVATION TOP OF HOLE						Hole No. R 33/2

PROJECT *Gallipolis Locks & Dam*   INSTALLATION *ORH CO*   SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
						Pull #5
	21				6	START 8:00
					21.0	End 8:48
	22					Time 48
						Drl 48
	23					Ran 9.4
			ss gr. to lt. gr. mod. hd.		7	Rec 9.6
	24		f. to med gr. mic. occ			Loss 0.4
			x bedded gradational			unacc 0.4
	25		contact w/ sLs		24.8	
			mech bkn 468.4 to			
	26		467.0 w/ poss loss			
			Num mic bd. pl. below			
	27		469.8		8	
	28					
					28.4	
	29					
	30					TI & TP Depth 29.8
					9	Pull #6
	31					START 9:15
						End 9:50
	32				31.8	Time .35
						Drl .35
	33					Ran 8.3
						Rec 8.2
	34				10	Loss 0
						unacc 0
	35					
					35.6	
	36					
460.0	37				11	
458.8	38		Bottom Hole		38.0	TP 38.0
						TI Depth 38.3

DRILLING LOG	DIVISION ORD	INSTALLATION ORH CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) STA 11+50 B

3. DRILLING AGENCY W. G. Isaacs

4. HOLE NO. (As shown on drawing title and file number) R34.1

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 496.7

8. DEPTH DRILLED INTO ROCK 460

9. TOTAL DEPTH OF HOLE 36.7

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL B "53"

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12-10-88 COMPLETED

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING 36.7 %

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7	1 2 3		SS lt. gr. mod. hd., med. to c.g., hi ang. frac. (bkn) 493.1-492.5 core dim. Loss 492.2. 492.0 SLS s. gr. @ 491.5-490.9		1 3.4	Pull #1 Start 8.40 End 8:55 Time 15 Drl 15 Ran 4.7 Rec 4.7 Loss 0 unacc 0
	4 5 6				2	Ti & TP Depth 4.7 Pull #2 Start 9.09 End 9.23 Time 14 Drl 14 Ran 3.2 Rec 3.1 Loss 0.1 unacc 0.1
489.0	7 8 9		ICL r bn, s, mot w/gr. & gn gr. cl, (almost cls) lt. gr. 489.0 488.6 fatty @ 489.0-488.8		7 3	TP Depth 7.9 Ti Depth 8.3 Pull #3 Start 9:35 unacc 0.2 End 9:47 Time 12 Drl 12 Ran 1.8 TP 9.7 Rec 1.6 Loss 0.2
487.1	10 11 12 13		SLS gr. to gn. gr., s to mod hd. sandy, gradationaly. interbdd. w/ fine g' SS throughout. mech bkn. 484.0-486.8 ang.pl.@ 30° 486.8-486.7 Fe. stained (scattered spots) 486.1-485.4 sh. 487.0-486.6		10.1 4	Ti Depth 10.6 Pull #4 Start 10.00 End 10:15 Time 15 Drl 15 Ran 3.8 Rec 3.2 Loss 0.6 unacc 0.6 TD 13.5
483.2	14 15 16 17		SS. gr. to lt gr. mod hd f to med gn. slightly mica		14.1 5	Ti Depth 14.1 Pull #5 Start 10.21 End 10.38 Time 17 Drl 17 Ran 4.1 Rec 4.1 Loss 0 unacc 0 TP 17.6
479.1	18 19		SLS gr. s. to med hd. gradational w/sh @ top to sandy @ bottom bkn. pl. w/ 0.2 spacing poss. cl sams cl. Seam. 48'		17.6 6	Ti Depth 18.1 Pull #6 Start 10:58 TP Depth 18.5 End 11:06 Time 8 Loss 0.1 Drl 8 unacc 0.1 Ran 0.9 Rec 0.9 Ti Depth 19.2

PROJECT Gallipolis Lock & Dam HOLE NO. R34/1

ELEVATION TOP OF HOLE		Hole No. R 34/1
496.7		

PROJECT: Gallipolis Lock & Dam
INSTALLATION: ORH - CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21				6	Pull # 7
					21.0	START - 12.06
474.6	22					End . 12:33
	23		SS lt gr. mod. hd med.		7	Time . 17
			to fine g. mic. occ.			Drl . 17
	24		x-bdded. mech. chipped			Ran . 8.2
			469.8 - 469.1			Rec . 8.4
	25				24.9	LOSS θ
						unacc θ
	26					
	27				8	TP Depth 26.7
	28				28.2	
	29					Ti Depth 28.6
						Pull # 8
	30				9	START 12:50
						End 1:10
	31					Time 20
						Drl 20
	32				32.1	Ran 10.0
						Rec 10.0
	33					LOSS θ
						Unacc θ
	34				10	
	35					
	36				35.7	
					11	TP 36.7
459.8	37		Bottom Hole		36.9	Ti Depth 36.9
	38					

PROJECT: Gallipolis Lock & Dam
HOLE NO. R 34/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) 1+08 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-34/2

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 496.8

8. DEPTH DRILLED INTO ROCK 460.0

9. TOTAL DEPTH OF HOLE 36.8

10. SIZE AND TYPE OF BIT 4 x 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL "B" 57

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/a — DISTURBED N/a — UNDISTURBED N/a

14. TOTAL NUMBER CORE BOXES 7

15. ELEVATION GROUND WATER N/a

16. DATE HOLE STARTED 12-12-88 — COMPLETED

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 36.8

19. SIGNATURE OF INSPECTOR JET

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8	1–7		SS lt gr., mod. hd, med to coarse grained, sli. mic. occ x-bdd - surface trakage : 496.8 - 496.6 redrilled 491.9 - 491.6	3.8	1	Pull #1 — START 11.17 — End 11.27 — Time 10 — Drl 10 — Ran 4.9 — Rec 4.9 — Loss 0 — Unacc 0
	5–7			6.9	2	Tl Depth 5.1 TP 4.9 — Pull #2 — START 12.12 Loss 0.1 — End 12.20 Unacc 0.1 — Time 8 — Drl 8 — Ran 2.6 — Rec 2.5
489.3	8		inc. r. br. s. mott. w/gr & gn cl bkn 488.9 - 488.6		3	Tl & TP Depth 7.5 — Pull #3 — START 12:34 — End 12.55 — Time 21 — Drl 21 — Ran 3.2 — Rec 2.9 — Loss 0.3 — Unacc 0.3
487.9	9–10		SLS gr. to. gn. gr., s to med hd. CL bkn 487.9-487.7 487.2 486.9 Sandy blow 486.1	9.9		
485.1	11–17		SS gr. mod. hd. f. to med. g. c w/depth gradational contact w/ upper SLS	13.7	4	TP 10.7 — Tl Depth 11.3 — Pull #4 — START 1.17 — End 1.41 — Time 24 — Drl 24 — Ran 9.9 — Rec 10.0 — Loss 0 — Unacc 0
	16				5	
479.2	17–18			17.3		
478.3	18		SLS gn. to gn. gr. s. to med hd. bkn 477.5 - 477.8 Sh. scum 478.7 - 478.5		6	
	19		SS. gr. to lt. gr. mod. hd., f. to med g. mic. occ. x bedd (calcite filled			

PROJECT Gallipolis Lock & Dam — HOLE NO. R 34/2

	ELEVATION TOP OF HOLE	PROJECT		Hole No. R.34/2

PROJECT Gallipolis Lock & Dam

ELEVATION TOP OF HOLE 496.8

INSTALLATION ORH-OD

Hole No. R.34/2

SHEET 2 **OF** 2 **SHEETS**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21		voids)? Small lt color frag. 474.8, 473.8	20.7		IL & TP 20.6 Pull #5
	22					Start 2.00
	23				7	End 2.25 Time 25 Drl 25.
	24					Ran 10.0 Rec 10.0
	25			24.3		Loss 0 Unacc 0
	26					
	27				8	
	28			28.0		
	29					
	30				9	
	31			31.4		TI Depth 34.6 TP 34.5 Pull # 6
	32					START 2:43 End 3:08
	33				10	Time 2.5 Drl 2.5
	34					Ran 7.5 Rec 7.6
	35			35.		Loss 0 unacc 0
	36					
460.0	37				11	
458.7	38			38.1		TI Depth TP 38.0 38.2

PROJECT	HOLE NO.
Gallipolis Lock & Dam	R34/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT
2. LOCATION (Coordinates or Station) STA 10+98 "B"	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W. G. Jaques	12. MANUFACTURER'S DESIGNATION OF DRILL "B" 58
4. HOLE NO. (As shown on drawing title and file number) R 35	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER DAVE HARPER	14. TOTAL NUMBER CORE BOXES 11
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE STARTED 12-10-88 COMPLETED 12-12-88
7. THICKNESS OF OVERBURDEN 496.9	17. ELEVATION TOP OF HOLE 496.9
8. DEPTH DRILLED INTO ROCK 460.	18. TOTAL CORE RECOVERY FOR BORING 36.9 %
9. TOTAL DEPTH OF HOLE 36.9	19. SIGNATURE OF INSPECTOR pT

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SS lt. gr., mod. hd., med. to c. gr. sli. mic. sli Fe. sta. 496.9. -496.5			Pull # 1 START 2:10 End 2:26 Time 16 Drl 16 Ran 4.9 Rec 4.9 Loss 0 unacc 0
	1				1	
	2					
	3				3.3	
	4					
	5				2	Ti & TP 4.9 Pull # 2 START 2:41 End 2:50 Time 9 Drl 9 Ran 2.8 Rec 2.8 Loss ← unacc ←
	6					
489.9	7		INC. lt gr. S. Cl.		6.2	
489.2						Ti Depth 7.8 TP 7.7
	8		SLS gr. to gr. gr. s., to med. hd. gradational w/sh @ Top to sa. @ bot. mech. bkn. 489.2 - 488.9 w/ poss loss. sandy blow 487.2		3	START 7:45 Loss 0.3 End 7:59 unacc 0.3 Time 14 Drl 14 Ran 8.4 Rec 2.1
	9					
	10				10.1	Ti & TP Depth 10.1 Pull # 4 START 8:20 End 8:42 Time 22 Drl 2.2 Ran 3.0 Rec 3.2 Loss ← unacc ←
	11				4	
	12					
484.4	13		SS gr. med. hd. f. to med. g. gradational Contact w/ upper SLS		13.3	TP 13.1
	14					Ti Depth 13.8 Pull #5 START 9:03 END 9:24 Time 21 Drl 21 Ran 5.0 Rec 5.0 Loss ← unacc ←
	15				5	
480.5	16				17.	
	17		SLS gr., soft. to med. hd. s. below 478.6 bkn (sev.) 480.5 480.2 bkn pl. ~0.2' spacing w/ CL seams 479.9 int. bdd. claystone, lt. gr. s-as Cl. 479.-479.8, 479.3.-478.8 interbdd w/ss. gr. med hd f. g. 478.6-476.1			TP 18.1
	18				6	Ti Depth 18.6 Pull # 6
	19					

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam	HOLE NO. R 35/1

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 496.9

Hole No. R35/1

PROJECT: Gallipolis Lock & Dam

INSTALLATION: ORH-CD

SHEET 2
OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.1				20.5		Pull #6
	21		SS. gr. to lt. gr. mod hd.			Start 10.10
	22		f t. med gn. mic. grad.		7	End 10.33
			Cont w. sLS			Time 23
	23		lt. bkn. w/cl seam.			Drl 23
			460.6 - 460.4 mech. bkn.			Ran 8.8
	24		459.3 - 459.6	23.9		Rec 8.9
	25					Loss σ
	26				8	unacc σ
	27					
				27.5		Ti Depth 27.4 Tp Depth 27.2
	28					Pull #7
	29				9	Start 10.50
	30					End 11.11
						Time 21
	31			31.1		Drl 21
	32					Ran 9.9
	33				10	Rec 10.1
	34					Loss σ
	35			34.8		unacc σ
	36				11	
460.0	37					Tp Depth 37.0
459.6			Bottom Hole	37.3		Ti Depth 37.3
	38					
	39					

DRILLING LOG

DIVISION	ORD
INSTALLATION	ORH-CD
SHEET 1 OF 2 SHEETS	

1. PROJECT: GALLIPOLIS Lock + DAM
2. LOCATION (Coordinates or Station): MONO R-35 STA 10+58B
3. DRILLING AGENCY: W. G. JAQUES
4. HOLE NO. (As shown on drawing title and file number): R-35/2
5. NAME OF DRILLER: DAVE HARPER
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 0 497.0
8. DEPTH DRILLED INTO ROCK: 90.3
9. TOTAL DEPTH OF HOLE: 446.7

10. SIZE AND TYPE OF BIT: 4 Y 5 V2
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.S.L.
12. MANUFACTURER'S DESIGNATION OF DRILL: B.-53 MOBILE
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED N/A | UNDISTURBED N/A
14. TOTAL NUMBER CORE BOXES: 11
15. ELEVATION GROUND WATER: N/A
16. DATE HOLE: STARTED 12/28/88 | COMPLETED 12/28/88
17. ELEVATION TOP OF HOLE: 497.0
18. TOTAL CORE RECOVERY FOR BORING: 38.9 %
19. SIGNATURE OF INSPECTOR: LM.Q

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE			Pull #1
	1		LT. gR, M.H-H, m-cg.			START 18:13
						END 1826
	2		FE SURFACE STAINED			TIME 13min
					1	DRL 13min
	3		497.0 - 496.8, sh/			PAN 9.7
						REC 4.5
	4		STRINGERS 491.9, 490.5			LOSS 0
						UNACC 0
	5		480.8		3.7	
						DEP 9.7 T/DEP 9.5
490.7	6				2	Pull #2 START 18:45 END 1855 REC 1.9 TIME 10min LOSS 0 DRL 10min UNACC 0 PAN 1.7 T/DEP 6.3
	7		ICL	7.0		Pull #3 DEP 6.4 START 19:07
			P-BR, S, MOTTED w/gR-gNgR			END 19:25
488.9	8		SLT, LTGR 990.7-990.3			TIME 18min T/DEP 7.7
					3	DRL 18min DEP 7.8
	9		SLS			RAN 1.9
			gR-gNgR, S-m.H, Sa			REC 1.7
						LOSS 0.3
	10		GRADATIONALLY, INTERBDD			UNACC 0.3
				10.2		Pull #4 T/DEP 9.6
	11		w/ F.g. Ss, BKN 488.6			START 19:35
						END 19:37
	12		-488.4, 478.1-477.9, L/Ang		4	TIME 2min
						DRL 2min
	13		25° PN/w SLK 488.9,			PAN 5.0
						REC 1.5
	14		488.3, SL/BKN 984.6	13.8		LOSS 0 DEP 12.8 UNACC 0
						Pull #5
	15		-484.3, BKN PN w/SPAIC			START 2040
						END 2050 T/DEP 13.8
	16		0.2 484.3 - 482.7		5	TIME 10min DEP 14.1 DRL 10min PAN 1.3 REC 3.9 T/DEP 14.9 LOSS 0.5 UNACC 0.5
	17			17.9		Pull #6 START 21:02 END 21:22
	18				6 (CONT)	TIME 20min DRL 20min RAN 4.6 REC 11.1 UNACC 0 LOSS 0 DEP 18.7
	19					Pull #7
477.2	20					(CONT)

PROJECT: GALLIPOLIS Lock + DAM   HOLE NO. R-35/2

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 497.0				Hole No. R-35/2	
PROJECT GALLIPOLIS LOCK & DAM			INSTALLATION OPH-CP			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					PULL #7
			SANDSTONE		6	
	21		GR - LT GR., M.H, F.g.		21.0	START 21:95
						END 22:10
	22		GRADATIONAL CONTACT W/			TIME 35 min
						DRL 35 min
	23		UPPER SLS - SLT 977.8-479.0		7	RMV 6.8
						REC 9.6
	24		F-M.g. below 472.3, small			LOSS 0
						UNACC 0
	25		siderite Nod 470.9		24.5	DEP 24.7 DEP 24.5
						PULL #8
	26				8	START 22:35
.470.5						END 23:15
	27		SLS			TIME 40 min
			GR, M-H, SG few occ py Nod, Fe stained 469.9-469.8			DRL 40 min
469.0	28				28.2	RMV 9.5
			SANDSTONE			REC 10.5
	29		GR - LT GR., M.H-H			LOSS 0
						UNACC 0
	30		F-M.g. mic, Few occ		9	
	31		sm pyr Nod 968.5-468.0			
	32		Num SLS Frag 468.0-		32.0	
	33		467.7, Calc Cem 461.6 461.4			
	34		Sh seam btwn 460.6-460.5		10	DEP 39.2 T/DEP 34.0
	35					PULL #9
					35.6	START 23:29
	36					END 23:30
459.9	37		SLS		11	TIME 6 min
			GR. M.H-S Intrabrin cls			DRL 6 min
458.6	38		959.7-459.8, 959.9-459.3		38.4	RMV 6.1
			Interbdd S.S. GR, M.H.			REC 4.9
	39		F.g 458.9-453.7			LOSS 0 T/DEP 38.9
	40					UNACC 0
	41					DEP 40.3
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1980 OF - 829 - 603

PROJECT GALLIPOLIS LOCK & DAM	HOLE NO. R-35/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 4 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONOLITH R-36/1 STA 10+48 "B"

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-36/1

5. NAME OF DRILLER POWELL NORRIS

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN C 497.0

8. DEPTH DRILLED INTO ROCK 40

9. TOTAL DEPTH OF HOLE 457.0

10. SIZE AND TYPE OF BIT 4" X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/3/89 | COMPLETED 1/3/89

17. ELEVATION TOP OF HOLE 497.0

18. TOTAL CORE RECOVERY FOR BORING 40

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SAND STONE, SLY., M-cg.; m.h.; m.gr. M.C; 0.1 LC bTWN 0.0 & 5.0 (MECH) V.S. CONTACT		1	Pull #1 START 3:37 End 3:50 TIME 13 DRL 13 RAN 6.7 REC 4.9 LOSS 0.1 UNACC 0.1
					3.7	
					2	T DEP 5.0
490.3						DEP 6.7
	7		ICL P. bRI GREENISH, gR.S. SLK, v bKN. GRADING		7.2	Pull #2 START 4:00 END 4:25 TIME 25 DRL 25 RAN 6.3 REC 6.4 LOSS 0.6 UNACC 0.6
488.4					3.	
			Inter bdd CLS/SS			

PROJECT GALLIPOLIS LOCK & DAM | HOLE NO. R36/1

	ELEVATION TOP OF HOLE 497.0					
PROJECT 6Allipolis Lock & DAm			**INSTALLATION** ORH-CD			**SHEET** 2 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SLS/SS. gR. occ shy		3	
			smooTh hor pTg @			
			8.7, 9.3, 12.4, 13.7			
	11		0.6 LC btwn 5.0 & 12.0		11.4	
			C pRob in 6.7-8.0			
	12		HRSH. gRAding ss/cls			T-DEP 12.0
			THRoughouT CLS			
			SEAm @ 16.5-16.7			
			w/sli wSH. oil LNM @			DEP 13.0
	13		16.6-16.7 gRADing		4.	PULL # 3
			into shy, fig., m.h.			
			w/ THRu. dK gR.			START 4:45
	14		shy. sTgs.			ENd 5:15
						TIME 30
						DRL 30
					14.7	RAN 6.4
	15					REC 7.4
						LoSS e
						UNAcc e
	16					
					5.	
	17					
	18				18.2	
	19					
487.6						DEP 19.4
			SANdsToNE			T DEP 19.5
	20		shy, fig. m.h. w/ THRu		6.	PULL # 4
			dK. gR. shy., sTgs.			
			SA. CoNTeNT iNCREASiNg			
	21		w/depTh			
					21.6	
	22					

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PROJECT Gallipolis Lock & Dam		INSTALLATION ORH-CD		SHEET 3 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		SANDSTONE Sly. fig. m.h., w/ Thru dk. gr. shy. STgs. sand content Increasing w/depth.			PULL #4
	23					START 5:40
						END 6:05
					7	TIME 25
	24					DRL 25
						RAN 9.7
						REC 10.3
						LOSS 0
	25					UNACC 0
					25.4	
	26					
	27				8	
	28					
	29				29.0	
						DEPTH DEP 29.6
	30					PULL #5.
	31				9	START 6:25
						End 6:55
						TIME 30
	32					DRL 30
						RAN 10.5
						REC 10.3
						LOSS 0
	33				32.6	UNACC 0
					10	
	34		(CONT)		(CONT)	(CONT)

ELEVATION TOP OF HOLE						

ELEVATION TOP OF HOLE: 479.0

PROJECT: GALLIPOLIS LOCK & DAM

INSTALLATION: ORH-CD

Hole No. R3611

SHEET 4 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34		SANd Stone sky fig m.h. w/ Thru dkgr&by,			PuLL #5
	35		sTgs iAnd		10	
461.5			content increAsing			
	36		INter beded. sLs/ss			
					36.3	
	37					
459.5						
	38		IcL R.BR S.			
458.1					11.	
	39		SANd STcNE.			
			6R-gNgR m.g, m#.			
457.0	40		Bottom Hole		40.0	I DEP 29.7 DEP 40.0
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLipOLis LocK + DAM

2. LOCATION (Coordinates or Station) MONO P-36 STA 10+10 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-36/2

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.2

8. DEPTH DRILLED INTO ROCK 37.5

9. TOTAL DEPTH OF HOLE 459.7

10. SIZE AND TYPE OF BIT 4Y5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53-MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/29/88 COMPLETED 12/29/88

17. ELEVATION TOP OF HOLE 497.2

18. TOTAL CORE RECOVERY FOR BORING 375

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			SANDSTONE			PULL #1
	1		LT.GR., M.H.-HH, M-CGR.			START 7:55
	2		BKN @ SURFACE + MECH		1	END 8:20 TIME 25min
	3		Rounded 497.2-497.1			DRL 25min RAN 5.0
	4		FE SURFACE STAINED		3.9	REC 4.8 LOSS Ø
	5		497.2-496.9			UNREC Ø TDCP 8.8 DCP 8.0
491.4	6		ICL		2	PULL #2 START 8:30
	7		R-BR, S, MOTTLED w/GR-GN GR LT GR CLS 491.4-490.8			END 8:55 TIME 25min
489.5			SEVERLY BKN 491.1-490.8		7.7	DRL 25min
	8		SLS			RAN 4.3 UNREC Ø REC 4.3
	9		GR-GNGR, S-MH, OCC		3	LOSS Ø T/DCP 8.9 DCP 9.1
	10		THIN calcite Filled FRAC			'' PULL #3
	11		489.5-484.9, MECH BKN		11.0	START 9:15 T/DCP 9.9 END 9:28
	12		488.3-488.1, SQ SLS w/DCC			TIME 13min. DRL 13min
	13		GRADITIONAL INTERBDS		4	RAN 4.9 REC ·.8
	14		OF VE.S. GR, SS. below		13.3	LOSS Ø UNREC Ø
	15		484.9 BKN 483.5-483.1		5	PULL #4 DCP 14.0 DCP 14.3 START 9:35
	16		480.8-480.7, severely			END 9:50 TIME 15min
	17		BKN 482.9-482.7		17.0	DRL 15min RAN 0.3
	18		CL. coOTING DN 482.0-		6	REC 4.4 LOSS Ø
478.9			481.8			UNREC Ø T/DCP 18.6
	19		SANDSTONE			PULL #5
	20		(CONT)		(CONT)	CONT

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT GALLIPOLIS LocK + DAm	HOLE NO. R-36/2

ELEVATION TOP OF HOLE 497.2					**Hole No.** R-36/2	
PROJECT GALLIPOLIS LOCK & DAM			**INSTALLATION** ORH-CD		**SHEET** 2 OF 2 SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #5
	21		LT gr-gr, MH-H, F-M.gr		21.2	START 10:15 END 10:30 LOSS Ø
	22		mic. grad, contact w/upper		7	TIME 15min UNACC Ø DRL 15min
	23		SLE, w/pyr nod.			PAN 10.0 REC 4.2
	29		SLT - 479.2 - 474.0		24.5	PULL # 6 START 11:00 END 11:20 DCP 24.3
	25		SLT - F.gr ABOVE 476.0			TIME 20min
	26		CAL - CEM - 473.3 - 471.9,		8	DRL 20min PAN 4.2
	27		469.5, - 468.0			REC 10.0 LOSS Ø
	28		S. SLT FRAG 470.8		28.1	UNACC Ø T/DCP 27.5 DCP 27.9
	29		BKN 469.2 - 469.0, 461.8		9	PULL #7 START 11:40 END 12:00
	30		461.7			TIME 20min
	31		ANg FRAC 45° 468.6 -		31.6	DRL 20min PAN 9.5 REC 9.3
	32		468.3			LOSS Ø UNACC Ø
	33				10	
	34					
	35				35.2	
	36				11	
459.7	37		Bottom Hole		37.5	DCP 37.9 T/DCP 37.5
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1980 OF - 620 - 603

PROJECT GALLipolis Lock + Dam	HOLE NO. R-36/2

DRILLING LOG	DIVISION OPD	INSTALLATION OPH-CD	HOLE NO.	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono R-37 STA 10+00 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-37/1

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.2

8. DEPTH DRILLED INTO ROCK 32.9

9. TOTAL DEPTH OF HOLE 459.3

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/29/88 COMPLETED 12/29/88

17. ELEVATION TOP OF HOLE 497.2

18. TOTAL CORE RECOVERY FOR BORING 37.9

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2	1		SANDSTONE LT. GR., M-H-H, M-C GR. Fe SURFACE STAIN 497.2 - 496.6, Few, occ. cl. STringers 493.2 - 493.0, metcl dip. 493.5 - 493.2 BKN pw w/spacing 0.2 497.2 - 496.7, 493.2 - 492.0		1	Pull #1 START 8:45 END 8:56 TIME 11min DRL 11min LOSS 0 RAN 4.0 UNACC 0
	2					
	3				3.5	REC 4.0
	4					Dep+T|Dep 4.0
492.0	5				2	Pull #2 START 9:00 END 9:19 TIME 19min DRL 19min RAN 4.1
	6		CLS LT GR S. SH., N-BR mottled w/GR. ICL 490.8 - 490.3 BKN 490.3 - 490.2			
	7				6.9	
489.4						REC 4.2 UNACC 0 LOSS 0 Dep 8.2
	8		SLS GN.GR, S-MH, gradational w/SA @Top To SQ Bottom num SMALL, THIN discontinuous calcite Filled veins 489.4 - 489.0, col SLS 489.4 - 486.8 SQ gradational int'bdd ss below 483.8 F gr SS gr. m.H 481.8 - 480.4, Ang FAAC ~30° @ 481.8 - 481.6 - 481.4 - 180.8		3	Pull #3 START 9:28 END 9:45 TIME 17min DRL 17min RAN 6.6 REC 6.5 LOSS 0.0 UNACC 0.0
	9					
	10				10.9	
	11				4	
	12					
	13					
	14				13.9	
	15					Dep 14.7 T/Dep 14.6
	16				5	Pull #4 START 10:00 END 10:25 TIME 25min DRL 25min RAN 8.0
	17				17.9	
	18				6	REC 8.3 LOSS 0
478.6	19		SANDSTONE GR-LT GR MH-HH, F-M GR. (CONT)		(CONT)	UNACC 0
	20					(CONT)

PROJECT Gallipolis Lock + Dam **HOLE NO.** R-37/1

PROJECT   GALLIPOLIS LOCK + DAM   INSTALLATION   ORH-CD

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV- ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	20		SANDSTONE		6	Pull #4
	21		mic, occ pyr nod - 475.9-		21.1	
	22		474.8, nom, small sls			
			frac 470.1-469.5			
	23				7	DCP 22.9 T/DCP 22.8
	24					Pull #5
						START 10:40
	25				24.6	END 11:08
						TIME 28min
	26				8	DRL 28min
						RAN 7.2
	27					REC 7.2
469.5						LOSS 0
						UNACC 0
	28		SLS GR, M.H, SG OCC PYR NOD SIDERITE NOD SPECKS 468.5-469.1		28.3	
468.9						
	29		SANDSTONE		9	DCP 30.1 T/DCP 30.0
	30		SMALL OCC PYRITE			Pull #6
	31		NOD, +CLS FRAC +STRINGER			START 11:20
	32		468.0 -467.5, CAL-CEM		31.9	END 11:41
						TIME 21min
	33		466.7 - 465.5 SH SEAM			DRL 21min
	34		459.6 - 459.5, SLS FRAG		10	RAN 7.9
			459.9 - 459.3			REC 7.8
	35					LOSS 0
	36				35.6	UNACC 0
	37				11	
459.3	38		Bottom Hole		37.9	DCP + T/DCP 37.9
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A   JUN 67   (ER 1110-1-1801)   GPO 1980 OF - 628-603   PROJECT   GALLIPOLIS LOCK + DAM   HOLE NO.   R-37/1

| DRILLING LOG | DIVISION
ORD | | | INSTALLATION
OCH-CD | | SHEET 1
OF 2 SHEETS |

1. PROJECT GAllipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO R-37 STA 9+64B

3. DRILLING AGENCY W. G. JACUES

4. HOLE NO. (As shown on drawing title and file number) R-37/2

5. NAME OF DRILLER STEVE FRY / DAVE HARPER

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 457.0

8. DEPTH DRILLED INTO ROCK 39.1

9. TOTAL DEPTH OF HOLE 457.9

10. SIZE AND TYPE OF BIT 4X5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL.

12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/29/88 COMPLETED 12/29/88

17. ELEVATION TOP OF HOLE 4970

18. TOTAL CORE RECOVERY FOR BORING 37.7

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE			Pull #1
	1		LT,gr. MH-HH, M-cgr.			START 12:45
			BKN 497.0-496.5, Fe		1	END 1:00
	2		STAIN 496.1-495.5 Sh			TIME 15min
			SEAM 493.5 - 493.3			DRL 15min
	3					RAN 4.0
					3.5	REC 4.0 UNACC∅
493.0	4					LOSS ∅ DCD 4.0
			I CL			Pull #2
	5		R-BR, S-VES, MOTTLED			START 1:10
					2	END 1:25
	6		W/gr + gn.gr. LT,grcls, 493.0			TIME 15min
						DRL 15min
	7		492.7 + BKN, SELcoLy BKN		7.0	RAN 5.0
						REC 4.5
	8		491.7-491.0, 490.3-490.0,			LOSS ∅
					3	UNACC ∅
487.9	9		485.9-485.2 BKN 493.3-492.1			DCD 9.0 TIDCP 8.9
			SLS			Pull #3
	10		gr-gngr, S,-MH, SQ			START 1:50
					10.6	END 2:15
	11		Sh ABove 986.8 + SS Below			TIME 25min
						DRL 25min
	12		BKN 987.9-986.7, 985.3-985.3		4	RAN 9.8
						REC 9.8
	13		gRADATionALLy INTerbedded			LOSS ∅
						UNACC ∅
482.9	14		W/F.gr SS below 985.2		14.0	
			SANDSTONE			
	15		gr-LTgr. M.H-H M-Fgr.			
	16		mic, CAL, Crm, 482.9-481.5		5	
	17		467.6-461.8, Fgr. 478.9			
	18		NUM sh STRINGERS + FRAGS		17.8	
					6	
	19		W/CAL FILL VUGS 466.1-465.3			DCD+TIDCP 18.8
					(CONT)	PULL#4
	20		(CONT)			(CONT)

PROJECT	HOLE NO.
GALLIPOLIS LOCK + DAM	R-37/2

PROJECT: GALLIPOLIS LOCK + DAM
INSTALLATION: ORH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					
	21		SANDSTONE		6	PULL #4
			Sh, seams 465.2 - 465.0			START 2:30
	22				21.5	END 3:15
			464.5 - 464.2.			TIME 45 min
	23				7	DRL 45 min
						RAN 10.0
	24					REC 10.0
						LOSS 0
	25					UNACC 0
	26				26.2	
	27				8	
	28					
	29				28.8	T/DEP + DEP 28.8
						PULL #5
	30				9	START 15:35
						END 16:10
	31					TIME 35 min
						DRL 35 min
	32					RAN 5.8
						REC 5.0
					32.5	LOSS 0
463.8	33					UNACC 0
	34		ICL		10	
			R.Br. S. mottled w/gr, gage			
462.2	35		Slt Lt go. V.S. cls 963.8 - 463.4			DEP 34.6 T/DEP 34.6
			SLS			PULL #6
	36		gr. S. - M.H. Sh.		36.0	START 16:35
						END 17:15
	37				11	TIME 40 min
459.3						DRL 40 min
			Bottom Hole		37.7	RAN 6.1
	38					REC 3.9
						LOSS 0 T/DEP 32.7
	39					UNACC 0
	40					DEP 39.1
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD		INSTALLATION ORH2D			SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO R-3B STA 9+54 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-3811

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.3

8. DEPTH DRILLED INTO ROCK 39.1

9. TOTAL DEPTH OF HOLE 468.2

10. SIZE AND TYPE OF BIT 4 YS ½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/29/88 COMPLETED 12/29/88

17. ELEVATION TOP OF HOLE 497.3

18. TOTAL CORE RECOVERY FOR BORING 373 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.3			SANDSTONE			Pull #1
	1		GR-LTGR, HARD M-CGR.		1	START 12.55
	2		FE SURFACE STAIN, 497.3			END 13.00
						TIME 5min
	3		496.7, FEW OCC Sh STANGER			DRL 5min
	4		+ FRAG THROUGHTOUT		3.7	RAN 4.9
						REC 50
	5					LOSS Ø
						UNACC Ø
491.1	6					DCP 5.0 T/DR 4.9
			S/S		2	Pull #2
489.2	7		9R. S.-MH, Sa BKN 490.1 489.5		7.2	START 13.10
			ICL			END 1340
	8		P. BR-S. MOTTLED W/GR, -			TIME 30min
488.2	9		9N.GR. Sh		3	DRL 30min
			S/S			RAN 9.8
	10		9N.GR. -GR S-MH. Sa			REC 9.7
	11		Sh. 988.2-986. 980.2-9785		11.0	LOSS Ø
	12		Sa MH 9561 980.2, intrbth			UNACC
	13		W.F. GR. SS 9861-980.2		4	
	14					
481.8	15				19.7	DCP 19.7
	16		SANDSTONE 9R. M.H. F.GR			Pull #3
480.5					5	START 13.55
	17		S/S			END 14.12
	18		9N.GR. -GR. S-MH. Sa			TIME 17min
478.5	19		SANDSTONE		18.6	DRL 17min
			9R-LTGR, MH, F-MGR-mic		6 (cont)	RAN 10.0
	20		(CONT)			REC 10.0
						LOSS Ø
						UNACC Ø
						(CONT)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT	HOLE NO.
Gallipolis Lock + Dam	R-3811

| PROJECT **GALLIPOLIS LOCK+DAM** | INSTALLATION **DRH-CD** | | | | | SHEET **2** OF **2** SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					PULL #3
	21		SANDSTONE		6	(CONT)
	22		Few occ sm.sh. stringer		222	
	23		+ FRAG 473.4-472.5, occ			
	24		Pyr. nod 472.0 -470.6		7	
	25		SLS seam - 469.4-469.3			DEP 24.7 / T/DEP 25.0
	26		469.3 - 469.2 mech chip		25.9	PULL #4
	27		466.2 -465.4, Calcm.			START 14:28
	28		464.7 - 463.5		8	END 14:51 / TIME 23 min
	29				27.5	DRL 23 min / PAN 10.0
	30					REC 9.2
	31				9	LOSS 0
	32					UNACC 0
	33				320	
463.5					\	DEP 33.7 / T/DEP 33.9
	34		ICL / R.BR. mottled w/GR, SLT, LTGR			PULL #5
462.3	35		FATTY CL BRN SC 463.5-463.4 / SLK 463.4-463.2		10	START 15:00
			SLT			END 15:26
	36		GR, M-H, occ mottled w/R.BR / 30° PLUG DN W SLK 460.2			TIME 26 min / DRL 26 min
460.0	37		460.0		373	PAN 5.4 / REC 2.5 / T/DEP 37.3
			Bottom Hole			LOSS 2.9
	38					UNACC 2.9
	39					DEP 39.1
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORHrCD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO R-38 STA 9+10 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-38/2

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 497.1

8. DEPTH DRILLED INTO ROCK 37.4

9. TOTAL DEPTH OF HOLE 459.7

10. SIZE AND TYPE OF BIT 4½×½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/29/88 | COMPLETED 12/30/88

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 37.4 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SANDSTONE LTGR., h., m-cgr., BKN DN. .3 spacing Throughout		1	PULL #1 START 17.55 END 18.10 TIME 15 min DRL 15 min RAN 3.8 REC 3.5 UNACC ∅ LOSS ∅ T/D@3.5 D@3.8
499.7	2				3.5	
	3		ICL R-BR, S-VE.S MOTTLED w/ GN GR-GR, SE BKN 494.7-494.4 LTGR S. CL. 494.7-499.5 SLT below 493.6			PULL #2 START 18.45 END 1900 TIME 15 min DRL 15 min T/D@5.5 RAN 2.0 REC 1.6 UNACC 0.9 LOSS 0.9 D@6.8
	4				2	
492.9	5					
	6		SLS GR. S-MH, Sa, CLS gr.s. 491.9-491.7, ICL R-br VE.S 491.7-491.6 ANG FRAC 45° 489.6-489.2, SS SEAM 486.6-486.4 gr m.H F. mgr. Interbdd w/ Fgr. SS below 485.5, cal. below 482.9		3	PULL #3 START 19.20 END 19.30 TIME 10 min LOSS 0.6 DRL 10 min UNACC 0.6 RAN 2.5 REC 3.0 T/D@8.1 D@9.6
	7				2.5	
	8					
	9					
	10					PULL #4 START 20.15 END 20:30 TIME 25 min DRL 25 min RAN 4.4 REC 5.6 T/D@12.7 LOSS ∅ UNACC ∅ D@13.7
	11				11.6	
	12				4	
	13					
	14					PULL #5 START 20.50 END 21.20 TIME 30 min DRL 30 min RAN 6.7 REC 7.5 LOSS ∅ UNACC ∅
	15				15.0	
481.1	16		CLS GR. S - VE.S. SLT SEAM 485.5-480.7 FRTT. 480.7- W/ COARSE SG @ 480.7-480.5		5	
479.5	17					
	18		SANDSTONE GR., M.H., m-Fgr, mic w/m SMALL SLS FRAG. 479.6-470.1 (CONT)		18.5	
	19				6 (CONT)	T/D@P.L
	20					(CONT)

PROJECT GALLIPOLIS Lockst Dam | HOLE NO. R-38/2

PROJECT GALLIPOLIS LOCK+DAM				**INSTALLATION** OAH-CD			**SHEET** 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			DCP 20.9
	21				6	PULL #6
						START 21:35
	22				22.0	END 22:00
						TIME 25min
						DRL 25min
473.7	23					RAN 5.5
	24		SLS		7	REC 5.2
			9R. M.H. Sh, BKN 473.5-			LOSS 0
	25					UNRC 0
			473.3 securely BKN @			
	26				25.7	T/DCP 25.4
			ICL SEAM 471.7, 471.6			DCP 25.9
	27					PULL #7
469.5					8	START 22:25
	28		ICL			END 23:10
			R.bR · S, CL, 9R (cLs)			TIME 45min
	29				29.1	DRL 45min
			ABOVE 469.5 - 463.7, securely			RAN 6.5
	30					REC 7.0
			BKN 469.3-469.0 SLTb-low			LOSS 0
	31				9	UNRC 0
			469.7			
	32					
					32.9	T/DCP+DCP 32.9
463.7	33					PULL #8
	34		SLS			START 7:45
			463.7 - 459.7, 9R M.H.,		10	END 8:50
	35					TIME 55min
			Sh, bKN pN. w/0ii spacing,			DRL 55min
	36					RAN 5.0
			463.7 - 463.0		36.2	REC 4.5
	37				11	LOSS 0.5
459.7			Bottom HOLE		32.9	UNACC 0.5 DCP+T/DCP 32.9
	38					
	39					
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT
GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station)
MONO P-39   STA 9+00 B

3. DRILLING AGENCY
W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number)
P-39/1

5. NAME OF DRILLER
Dowell NORRIS

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.8

8. DEPTH DRILLED INTO ROCK 38.5

9. TOTAL DEPTH OF HOLE 458.3

10. SIZE AND TYPE OF BIT 4 X 5 1/2

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL.

12. MANUFACTURER'S DESIGNATION OF DRILL B. 57 MOBILE

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/3/89 COMPLETED 1/9/89

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 37.9 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			SANDSTONE			Pull #1
	1		LT GR. H, M-C.GR. FC			START 8:30
					1	END 8.95
	2		SURFACE STAINED 496.8			TIME 15min
						DRL 15min
	3		496.4			RAN 5.0
					3.6	REC 4.8
	4					LOSS 0.3
						UNREC 0.3
491.7	5					DEP 5.0
			SLS		2	TIDEP 5.0
	6		GR, M-H, SA Interbd			Pull #2
			W/F.GR. SS mech BKN			START 8.55
	7		491.7 - 491.6			END 9:20
					7.5	TIME 25min
488.9	8					DRL 25min
			SANDSTONE		3	RAN 9.9
	9		F.GR. GR. M.H. ThinBd			REC 9.9
	10					LOSS Ø
	11					UNREC Ø
485.2					11.0	
	12		SLS			
	13		GR., M.H, SA Interbd		4	
	14		W/F.GR. SS.			
	15					TIDEP 19.9
481.1	16				18.7	DEP 15.0
						Pull #3
	17		CLS		5	START 10:05
479.8			S. GR. SH.			END 10:40
	18		SANDSTONE		17.7	TIME 35min
			GR. H-M H, M-F GR.		6	DRL 35min
	19		SHALE SEAM (BKN) 476.0		(CONT)	RAN 10.8
			477.8			REC 10.2
	20		(CONT)			LOSS Ø
						UNREC Ø
						(CONT)

ENG FORM 1836
MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT GALLIPOLIS Locks + DAM   HOLE NO. P-39/1

PROJECT							SHEET 2
Gallipolis Lock & Dam			INSTALLATION	ORH CD			OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	Pull #3
	21		occ sh. stringers 479.5-		21.3	
	22		473.6			
473.6	23				7	
	24		CLS			
			gr, s, sh. occ slt,			
471.8	25		scattsly bkn 972.6-971.6			
	26		ICL		25.6	Dep+T/Dep 25.6
	27		R. bn, s, occ mottled			Pull #4
						Start 11:10
	28		w/gn-gngr, num. slt		8	End 11:25 T/Dep 27.1
						Time 15min
						DRL 15min
	29		mech bkn 469.7-967.5			RAN 3.1 Dep 28.3
					28.9	REC 1.7 Pull #5
	30		461.9 - 961.6. Slt below			Loss 0.2 Start 8:31
						unacc 0.2 End 9:13
	31		469.6 w/more gr.			Time 42min
						DPL 42min
	32				9	RAN 8.3
						REC 6.6
	33				32.8	Loss 1.3
	34					unacc 1.3
						Pull #6
	35					Start 9:40
						End 9:56 T/Dep 33.6
	36				10	Time 16min Dep 33.9
						DPL 16min
	37					RAN 3.5
459.9			Ftm of Hole		37.9	REC 3.5
	38					Loss 0
						unacc 0
	39					Dep+T/Dep 38.5
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1980 OF - 628-603

PROJECT	HOLE NO.
Gallipolis Lock + Dam	R-39/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-LD		SHEET 1 OF 2 SHEETS

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
Mono R-39 STA 8+60B

3. DRILLING AGENCY
W.G Jacues

4. HOLE NO. (As shown on drawing title and file number)
R-39/2

5. NAME OF DRILLER
Dowell Noris

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.9

8. DEPTH DRILLED INTO ROCK 40.5

9. TOTAL DEPTH OF HOLE 456.9

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/29/88 COMPLETED 12/30/88

17. ELEVATION TOP OF HOLE 497.9

18. TOTAL CORE RECOVERY FOR BORING 40.5 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.9			SANDSTONE			Pull#1
	1		LT GR, H., M-C GR, FC			START 16:35
						END 1655
	2		SURFACE STAIN 497.9-497.3		1	TIME 20min
						DRL 20min
						RAN 5.0
	3		CCC SH+CL STRINGERS			REC 4.8
						LOSS 0
493.9	4		+FRAG		37	UNACC 0
			SLS			
			GN-GR S, Sh CLSEAM 493.9			
492.9	5		SLSLT BKN 492.6-492.9			DEP 5.0
						T/DEP 5.1
			SANDSTONE		2	Pull#2
	6		GR-LT GR, M.H, V-F-			
						START 17:10
	7		M.GR. CCC MIC, VCF.GR		7.3	END 17:35
						TIME 25min
	8		TO SLT ABOVE 490.1, OCC			DRL 25min
						RAN 11.2
	9		IRON STAIN 488.1-487.2		3	REC 9.4
						LOSS 0
	10		CAL-CEM. 485.8-484.9			UNACC 0
	11		SMALL SLS, FRAG. 482.6-		10.9	
	12		482.0, SECURELY BKN			
					4	
	13		Sh SEAM 482.6-481.7			
	14		Sh STRINGERS 479.9		14.5	
	15		-479.3			
	16				5	T/DEP+DEP 16.2
						Pull#3
	17					START 18:20
						END 18.55
479.3	18				18.1	TIME 35min
			SLS		6	DRL 35min
	19		GR, S, Sh, CLS ABOVE 478.9			RAN 8.8
			BKN 478.9-478.5, 477.8-477.3		(CONT)	REC 10.1
	20		(CONT)			(CONT)

ENG FORM 1836
MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Locks+Dam   HOLE NO. R-39/2

							SHEET 2 OF 2 SHEETS

DRILLING LOG (Cont Sheet) — ELEVATION TOP OF HOLE **497.9** — Hole No. **R-39/2**

PROJECT: GALLIPOLIS LOCK + DAM
INSTALLATION: ORH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		6	PULL #3
477.2						
	21		SANDSTONE		21.9	LOSS 0.9
	22		9R, M.H, F-M9R,,, FRAC			UNACC 0A
	23		477.0 - 476.5		7	
473.1	24					
472.3	25		SLS 9R.S. SHALEY		25.5	T/DEP 29.6 DEP 25.0
	26		CLS			PULL #4
	27		9R., S, CLAYEY, BKN 471.3-471.1, 969.6-469.4		8	START 18.55 END 21.50 TIME 2HR55min
469.4	28					DRL 2HR55min RAN 8.2 REC 6.4
	29		ICL R.BR, S, occ mottled w/ 9R-9N9R. Severely BKN		29.0	LOSS 0 UNACC 0
	30		468.7-969.7, 968.4-467.8			
	31		467.1-466.3, Fe STAIN, F9R 35 466.3-466.2 SLT below		9	T/DEP 33.1
465.1	32		466.2		32.3	
	33		CLS 9R.S, Sh, occ mottled w/ R.BR.-9N-9R.			DEP 33.2 PULL #5
462.7	34				10	START 10.45 END 11.45 REC 4.2
	35		ICL		35.3	TIME 1HR LOSS 0 DRL 1HR UNACC 0 RAN 4.7
	36		R.-BR, S, Sh, mottled w/occ 9R.-9N9R., m-			PULL #6 START 8:00 END 8:21
	37		Severely BKN throughout			TIME 21min DRL 21min
	38				11	RAN 5.2 DEP 38.1
	39					REC 2.6 LOSS 2.6 UNACC 2.6
	40					
456.9			Bottom Hole		40.5	DCD +TID DEP 90.5
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) JUN 67   GPO 1980 OF - 628 - 603

PROJECT: GALLIPOLIS LOCK+DAM   HOLE NO. R-39/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO R-40 STA 8+50 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-40/1

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 497.4

8. DEPTH DRILLED INTO ROCK ₹38.5

9. TOTAL DEPTH OF HOLE 458.9

10. SIZE AND TYPE OF BIT 4 X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B. 53-MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/3/89 | COMPLETED 1/4/89

17. ELEVATION TOP OF HOLE 497.4

18. TOTAL CORE RECOVERY FOR BORING 37.8

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.4			SANDSTONE			PULL #1
	1		LT GR. H, M-C GR, OCC			START 6:50
						END 7:09
	2		MIC, FE SURFACE		1	TIME 19 MIN
						DRL 19 MIN
	3		STAIN 492.9 - 497.1			RAN 4.6
					3.6	REC 4.6
	4					LOSS ∅
						UNACC ∅ T/DCP 4.6 D<P 4.9
	5				2	PULL #2
491.9						START 7:16
	6		CLS			END 7:33
490.7			GR. S. Sh		7.2	TIME 17 MIN
	7		3 LS			DRL 17 MIN
489.6			GR. M. H. SG.			RAN 4.6
	8		SANDSTONE		3	REC 4.1
	9		GR - LT GR, M. H. - HH,			LOSS ∅ ' T/DCP 8.7
	10		F - M GR, VEF - FGR.			UNACC ∅ D<P 5.5
	11		SLT ABOVE 481.9, F-MGR.		10.7	PULL #3
						START 8:30
	12		BELOW, CALCEM 481.4 -			END 9:07
						TIME 37 MIN
	13		497.3, ANG FRAC.		4	DRL 37 MIN
						RAN 8.9
	14		480.8 - 900.6			REC 10.0
					19.9	LOSS ∅
	15					UNACC ∅
	16				5	
	17					
	18				18.0	
	19				6	T/D=∅ + D=P 18.7
						PULL #9
	20		(CONT)		(CONT)	(CONT)

PROJECT _Gallipolis Lock + Dam_	INSTALLATION _ORH-CD_		SHEET _2_ OF _2_ SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #4
476.6	21				21.4	START 9:25
	22		SLS			END 10:05
			gR. S-m.H, Sh, BKnPN.			TIME 40min
	23		.3 SPACING, SS SeAms			DRL 40min
			gR. H., F-mgR, occ SLS			RAN 10.2
	24		FRAg. 475.9-475.8, 475.5-		7	REC 11.1
			474.8, 474.6-474.4, CLS, gR, S			LOSS 0
	25		Sh. 474.0-472.5, SLightly			UNACC 0
	26		BLK 471.5-471.2		25.2	
470.8	27		CLS		8	
	28		gR-BR, S. Severely BKN			
	29		470.3-476.0, 468.7-467.5			DEPTH/DEP 28.6
			SLS gR., m-H, Sh 470.0		28.5	PULL #5
	30		469.5 ANS 45° PN. w/		9	START 10:55
466.9	31		SLK 469.8-467.5			END 11:15
			ICL			TIME 20min
	32		gR-SNgR., BKN 405.8-		31.5	DEL 20min
			464.8, 462.7-462.5,			RAN 4.8
	33					REC 4.5
	34		460.0-459.8, SLt w/		10	LOSS 0
						UNACC 0 T/DEP 34.1
	35		MORE gR below 461.5		34.9	DEP 34.9
	36					PULL #6
	37				11	START 8:15
459.6	38		Bottom Hole		37.8	END 8:50
						TIME 35min
	39					DRL 35min
	40					RAN 4.7
	41					REC 4.5
	42					LOSS 0.2
	43					UNACC 0.2 T/DEP 37.8
	44					DEP 38.5

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1980 OF-628-603   PROJECT _Gallipolis Lock + Dam_   HOLE NO. _R-40/1_

DIVISION	ORD	INSTALLATION	ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO R-40 STA 8+10 B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-40/2

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.9

8. DEPTH DRILLED INTO ROCK 39.5

9. TOTAL DEPTH OF HOLE 457.4

10. SIZE AND TYPE OF BIT 4 15½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/30/89 COMPLETED 12/30/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 39.3

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE			Pull #1
	1					START 9:30
			LT.GR., HARD, M-C.GR.			END 9.45
	2				1	TIME 15min
			FE, SURFACE STAINED			DRL 15min
	3					RAN 4.1 LOSS Ø
			496.9 - 996.7		3.8	REC 9.1 UNACC Ø
	4					DEP+T/DEP 9.1
	5					Pull #2
						START 9:52
					2	END 10:06
490.8	6					TIME 14min
			SLS			DRL 14min
	7		GR., M-H, SA, SH W/		7.5	RAN 5.0
	8		BKN PN. 0.2 SPACING			REC 5.0
	9		490.8 - 988.6, SEVERELY			LOSS Ø
					3	UNACC Ø,
	10		BKN 489.1 - 988.8, MECH			DEP 9.3 T/DEP 9.1
	11		BKN 487.8; 487.6, 489.8 -		11.3	Pull #3
						START 10:23
	12		489.7, THIN BD SS F.GR			END 10.00
						TIME 17min
	13		Below 486.2		4	DRL 17min
						RAN 3.9
						REC 3.9 T/DEP 13.0
						LOSS Ø
482.8	14					UNACC Ø DEP 13.2
			SANDSTONE		14.6	Pull #4
	15		LTGR-GR, M.H., F.GR.			START 10:55
	16		IN.GR 480.1 - 977.9			END 11 06
						TIME 11min
	17		MECH CHIPPED 479.2 -		5	DRL 11min
						RAN 4.5
	18		478.9, SLS, GR M.H. SA,			REC 4.5 UNACC Ø
					18.0	LOSS Ø
	19		477.9 - 476.4, SLT BELOW			DEP 18.2 T/DEP 18.0
					6	Pull #5
	20		476.9 (CONT)		(CONT)	(CONT)

PROJECT Gallipolis Locks & Dam HOLE NO. R-40/2

| ELEVATION TOP OF HOLE | 496.9 | | Hole No. | R-40/2 |

| PROJECT GALLIPOLIS Lock+DAm | INSTALLATION ORHCD | | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			PuLL #5
	21				6	START 11.21
475.1					21.8	END 1:40 / TimE 19 min
	22		SLS			DRL 19 min
	23		GR. M-H Sa., mod To		7	PAN 9.7 / REC 9.7
	24		SeveRely BKN, 474.2-			LOSS Ø
	25		472.4			WNACC Ø
470.7	26				25.3	
	27		CLS		8	
	28		GR- GNI GR, S-VES, cl 470.7-469.2, SLT below 468.5 SeveRely BKN 469.5-969.2, 468.5-4675, ICL, R-BR S, cl 469.2-468.5			DCP 27.9 T/DCP 27.6
	29				29.0	PuLL #6 / START 1:35
466.7	30					END 2:35 / TimE 1HR
	31		ICL		9	DRL 1HR / PAN 10.0
	32		R.-BR,- S-VES, moTTled w/ purplish-R, BKN 466.0-			REC 6.8 / LOSS Ø
	33		465.0, SeveRely BKN 464.4-			WNACC Ø
462.8	34		463.8		32.9	
	35		SLS		10	PuLL #7
	36		GR. S-M.H SH., ccc lightly moTTled WR-BR 462.8-459.9, BKN DN, 14 SPACING S-WRly BKN 460.5-460.4			START 15:50 / END 16:15 T/DCP 35.9
	37				36.4	TimE 25min / DRL 25min
459.9						PAN 5.0
	38		ICL		11	REC 4.8 DCP 37.9
	39		R-BR, S-VES. CLAYEY			LOSS Ø
457.6			BoTTom HoLE		39.3	WNACC Ø
	40					DCP 39.5 T/DCP 39.3
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67 (ER 1110-1-1801)   GPO 1966 OF-628-603

| PROJECT GALLipoLis Lock+DAm | HOLE NO. R-40/2 |

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

10. SIZE AND TYPE OF BIT 4 V5½

2. LOCATION (Coordinates or Station) Mono R-91 STA 8+00 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. G. Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

4. HOLE NO. (As shown on drawing title and file number) R-41/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

5. NAME OF DRILLER Wayne Tice

14. TOTAL NUMBER CORE BOXES 11

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/30/89 COMPLETED 12/30/89

7. THICKNESS OF OVERBURDEN 0 497.1

17. ELEVATION TOP OF HOLE 497.1

8. DEPTH DRILLED INTO ROCK 39.2

18. TOTAL CORE RECOVERY FOR BORING 39.2

9. TOTAL DEPTH OF HOLE 457.9

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SANDSTONE			PULL #1
	1		Lt.gr., H, M-C gr.			START 9:20
	2				1	END 9:31
			Fe SURFACE STAIN			TIME 11 min
	3		497.1-496.9, Thin Sh			DRL 11 min
						RAN 5.0
	4		Stringers 490.7-490.6		3.8	REC 5.0
	5					LOSS 0
					2	UNACC 0
	6					DEPTH/DEP 50
490.6						PULL #2
	7		SLS			START 9:40
			gr., m-H, sa. scarcely		7.3	END 10:04
	8					TIME 24 min
			BKN 490.3-482.6 gradation			DRL 24 min
	9				3	RAN 10.0
			Thin bd F,gr ss below 489.6			REC 10.8
	10					LOSS 0
			SLT.ss. m.H gr. 489.3-488.3			UNACC 0
486.1	11		SANDSTONE		16.0	
	12		gr. m.H. Fi-UE.F.gr. SLT.		4	
483.1	13		SLS			
	14		gr. s-m.H, sa, BKN DN. 1 spacing			
482.3					14.8	T/DEP 19.8 / DEP 15.0
	15		SANDSTONE			PULL #3
	16		gr. m.H. m-F gr., small		5	START 10:21
	17		SLS FRAG 479.4 w/			END 10:42
						TIME 21 min
	18		STRINGERS 478.5		18.2	DRL 21 min
					6 (cont)	RAN 9.8
477.8	19					REC 10.0
	20		SLS gr. m.H sa,			(CONT)

ENG FORM 1836 MAR 71 — PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Rocks + Dam	HOLE NO. R-41/1

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 497.1				Hole No. R-4111	
PROJECT GALLIPOLIS LOCK & DAM			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.6	20		SLS GR, M.H.-Sa			PULL #3
	21		SANDSTONE gR, m-H., F-VEF.		6	LOSS Ø UNACC Ø
474.8	22				21.9	
	23		CLS gR., s. Sh. severely BKN			
	24		472.1 - 471.4, SLT Below		7	
	25		471.4			DEP 25.0 T/DCP 24.8
470.9	26				25.7	PULL #4 START 11:09
	27		ICL			END 11:30 TIME 21min
	28		P.-BR, S- VE.S. mottled		8	DRL 21min RAN 10.0
	29		w/gR-gN.gR., BKN 469.9			REC 9.4
	30		- 969.8 , 969.7 - 469.6		22.9	LOSS 0.6 UNACC 0.6
	31		severely BKN 468.6-			
	32		466.8, 464.0 - 463.3		9	
	33		SLT Below 462.1		32.1	
	34		ANG.PN. 30°w/slk			
	35		459.9 - 459.7		10	DCP 35.0 T/DCP 34.9
	36					PULL #5 START 13:45
	37				37.2	END 13:57 TIME 12min DRL 12min
	38				11	RAN 4.2 REC 4.2 LOSS Ø UNACC Ø T/DCP 38.5
457.9	39		BOTTOM HOLE		39.2	DCP 39.2
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1980 OF - 628 - 603   PROJECT GALLIPOLIS LOCK & DAM   HOLE NO. R-4111

DRILLING LOG	DIVISION OPD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4 X 5½

2. LOCATION (Coordinates or Station) Mono L-41 STA 7+68 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W. G. Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 mobile

4. HOLE NO. (As shown on drawing title and file number) R-41/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER Dave Harper

14. TOTAL NUMBER CORE BOXES 11

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/30/88 COMPLETED 12/30/88

7. THICKNESS OF OVERBURDEN @ 497.2

17. ELEVATION TOP OF HOLE 497.2

8. DEPTH DRILLED INTO ROCK 38.4

18. TOTAL CORE RECOVERY FOR BORING 327 %

9. TOTAL DEPTH OF HOLE 458.8

19. SIGNATURE OF INSPECTOR JMV

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			SANDSTONE			Pull #1
	1		LT.GR, H, M-CGR,		1	START 16.50
	2		BKN PN w/0.1 SPACING			END 17.02
						TIME 12 min
	3		497.2 -496.2, NUM Sh			DRL 12 min
						RAN 5.0
	4		STRINGERS 492.8-492.9		3.7	REC 5.0
	5					LOSS 0
						UNACC 0
	6					DEP+T/DEP 5.0
490.4					2	Pull #2
	7		SLS			START 17.20
			GR-GN GR. M.H, SA,		7.2	END 12.37
	8					TIME 17 min
			LT.GR. CL SEAM 490.8-			DRL 17 min
	9				3	RAN 4.8
			490.7 Sh, BKN 490.1-			REC 4.9
	10					LOSS 0
			483.4, 482.8 -482.1			UNACC 0 T/DEP 9.6
					10.7	DEP 9.9
486.0	11					Pull #3
			SANDSTONE			START 17.52
	12		GR, M.H F. VE F.GR.		4	END 18.08
						TIME 16 min
489.3	13					DRL 16 min
			SLS			RAN 9.2 UNACC 0
	14		GR. M.H, SA			REC 3.7 T/DEP 13.6
					14.1	LOSS 0 DEP 14.0
482.3	15		SANDSTONE		5	Pull #4
			GR. M.H F.GR., Sh			START 18.20
	16					END 18.40
			STRINGERS 979.9 - 975.7			TIME 20 min
	17					DRL 20 min
						RAN 4.0 UNACC 0
479.5					12.7	REC 4.6 T/DEP 17.7
	18		SLS		6	LOSS 0 DEP 18.0
			GR, M.H., SA BKN PN		(CONT)	Pull #5
	19		W./SPACE 0.1 478.1-477.7			START 18.55
477.7						END 19.15
	20		SANDSTONE (CONT)			TIME 20 min (CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Locks + Dam

HOLE NO. R-41/2

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE	497.2	Hole No. R-91/2

PROJECT: Gallipolis Lock + Dam   **INSTALLATION:** ORH CD   SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #5
	21		GR-LT.GR., M.H, F.GR.			DRL 20 min
					21.1	RAN 9.9
			GRADATIONALLY Thin			REC 9.9
475.2	22		interbdd w/sandy/SLS			LOSS Ø
						UNACC Ø T/DEP 22.3
	23		CLS		7	DEP 22.9
			GR, S. SH, BKN pn			PULL #6
	24		@.2 SPACing, mcch			START 19:35
						END 20:18
	25		BKN 475.1-474.5, Thin		24.9	TIME 43 min
						DRL 43 min
	26		CL STAM 0.2 SPACING			RAN 7.6
						REC 8.2
	27		474.5-472.3, mcrecl		8	LOSS Ø
						UNACC Ø
469.0	28		Below 470.9			
	29		ICL		28.7	
	30		R.BR, S.-VES, mottled			
			w/gr + gn gr, v.s. tcl		9	DEP 30.5 T/DEP 30.3
	31					PULL #7
	32		ABOVE 463.3 /SLTbelow			START 21:10
					32.9	END 22:12
	33		463.3 BKN 467.9-467.6			TIME 1hr 2 min
						DRL 1hr 2 min
	34		466.8 -966.6			RAN 7.4
					10	REC 7.0
	35		Severely BKN 965.3-463.3			LOSS .4
						UNACC .4
	36				36.1	
	37				11	
459.9			Bottom Hole		37.7	T/DEP 37.7
	38					DEP 38.4
	39					
	40					
	41					
	42					
	43					
	49					

PROJECT: Gallipolis Lock + Dam   **HOLE NO.:** L-41/2

DRILLING LOG

DIVISION ORD	**INSTALLATION** ORH<D	**Hole No.** R-42/1

SHEET 1 **OF** 2 **SHEETS**

1. PROJECT GALLIPOLIS LOCK+ DAM

2. LOCATION (Coordinates or Station) MONO R-42 STA 7+58 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-42/1

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.2

8. DEPTH DRILLED INTO ROCK 42.7

9. TOTAL DEPTH OF HOLE 454.5

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/30/88 COMPLETED 12/30/88

17. ELEVATION TOP OF HOLE 497.2

18. TOTAL CORE RECOVERY FOR BORING 42.7

19. SIGNATURE OF INSPECTOR JMD

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
497.2			SANDSTONE			Pull #1
	1		LT.GR. - GR, H., M-C.GR.			START 15:00
	2		OCC MIC. GRADATIONAL		1	END 15:06 TIME 6min DRL 6min
	3		W/COARSE GR. @ BOTTOM TO			RAN 5.0 REC 5.1
	4		M.GR AT TOP CL-SEAM 496.3		3.6	LOSS Ø UNACC Ø
492.2	5		496.0 SH STRINGERS 492.3-9902			
			SLS		2	DEP 5.0 T/DEP 5.1
	6		GN. GR -GR, S-M.H., Say			Pull #2
	7		CL W/SH 492.2-4949,		7.1	START 15:14 END 15:45
	8		487.0-986.9, F.GR. SS.			TIME 31min
	9		488.9-988.0, HIGH ANG		3	DRL 31min RAN 10.1
	10		FRAC 988.5-9827, I			REC 10.0
	11		INTERBDD VF.F.GR. SS /SLS		10.8	LOSS Ø UNACC Ø
	12		BELOW 486.5			
	13				4	
	14					
					14.3	
482.1	15					DEP+T/DEP 15.1
	16		SANDSTONE		5	Pull #3
	17		GR -LT.GR., M.H, VRF-M.GR			START 16:25
			OCC MIC, HI GR. 482.1-479.1			END 16:40
	18		475.3-4733 F -VF. 480.7-		17.9	TIME 15min
	19		475.3, SMALL SLS FRAG 4796		6 (CONT)	DRL 15min RAN 9.9 REC 10.1
	20		(CONT)			(CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT GALLIPOLIS LOCK+DAM HOLE NO. R-42/1

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 497.2		Hole No. R-42/1	
PROJECT Gallipolis Lock + Dam			**INSTALLATION** ORH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			Pull #3
	21		SLS SEAM GR, M-H, SA.		6	LOSS 0
	22		478.5-478.8, 477.7-477.9		21.6	UNACC 0
473.9	23		475.5-4756			
	24		SLS		7	
			GR., MH., Sh., ANG, DN.			
	25		20° W/SLK 472.6-472.5, 471.3		25.2	DEP 25.0
	26		471.2			T/DEP 25.2
470.5						Pull #4
	27		CLS		8	START 17.10
	28		GR. S. Sh. ANG DN 20° W/SLK 469.5, 469.2, 968.3, 468.7			END 18.15
968.7						TIME 1HR 5min
	29		ICL		29.0	DRL 1HR 5min
			R. BR, S, MOTTLED,			RAN 10.1
	30					REC 6.2
	31		W/GR. GN, GR, SLT, N4m		9	LOSS 0.2
	32		ANG, DN, W/SLK 0°-45°			UNACC 0.2 T/DEP 31.6
	33		Throughout ~0.3 spacing		32.7	
	34		BKN 965.1-969.0, 959.7-			
	35		959.4, mech spin 962.8		10	DEP 35.1
	36					Pull #5
	37				36.4	START 18.55
	38					END 19.45
	39				11	TIME 50min
	40					DRL 50min
	41					RAN 7.6
						REC 7.7
	42					LOSS 3.9
459.5			Bottom Hole		42.7	UNACC 3.4
	43					DEP + T/DEP 42.7
	44					

ENG FORM 1836-A JUN 67

GPO: 1969 OF—329-245

PROJECT Gallipolis Lock + Dam   HOLE NO. R-42/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 4 SHEETS

1. PROJECT GALLIPOLIS LOCKS & DAM

10. SIZE AND TYPE OF BIT 4" X 5½

2. LOCATION (Coordinates or Station) MONOLITH R-42

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W. G JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL D-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-42/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

5. NAME OF DRILLER DAVID HARPER

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE | **STARTED** 1/3/89 | **COMPLETED** 1/3/89

7. THICKNESS OF OVERBURDEN 0.0 497.3

17. ELEVATION TOP OF HOLE 497.3

8. DEPTH DRILLED INTO ROCK 37.3

18. TOTAL CORE RECOVERY FOR BORING 38'

9. TOTAL DEPTH OF HOLE 460.0

19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.3			SANDSTONE, SLY, M.?, M.?R, M.h. M.? ?'? ?. S.S LHH ? O?? HH, ?, PT 1.0-1.5, S/S LHH 1.?-?.?, IN ?Tg ? ?.? IN HH? ?H 4? ?H SMOOTH HCX PTS. ? 4.5 ?UCH SCNT ? ?.?		1.	PULL #1 START 7.40 END 7.50 TIME 10 DRL 10 RAN 4.8 REC 5.0 LOSS 0 ?HCC 0 DEP 4.8 TDEP 4.8
				3.8		
492.1	5					DEP ? T DEP 4.?
			?LS ?, N?R ?CC ?/I		2.	PULL #2 START 7.58 END 8.13 TIME 15 DRL 15
490.4	7		SLS-S-m, h, m. gR SH. pT, SLy ?m SPHCED hor PTQS ?? ghout gRADing MORE SH ?/depth 0 Contact	7.1	3.	RAN 44 REC 4.2 ?OSS 0 ?H?? 0 T.??? ?.0 De? ?.? PULL #3

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT GAllipolis Lock & DAM	HOLE NO. R-42/2

| PROJECT GALLIPOLIS LOCK & DAM | INSTALLATION ORH-CD | | SHEET 2 OF 4 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SLS.		3.	Pull #3
					10.7	START 8:30
486.1	11					END 9:05
			SANDSTONE, sLy,			TIME 35
	12		flg., m.h., m. gr.			DRL 35
			w/ sLy LAM. o ptg.			RAN 10.1
			w /TR. gR. CL. COA.		4.	REC 10.1
	13		@ 11.5 ptg. @ sLy			LOSS 0
			LAM. @ 12.7; Less			UN'ACC 0
			sLy. with depth grading			
	14		l. sLy @ 13.5; 0.1S		14.2	
			gR cL. @ 17.1 - 17.2;			
	15		Picking up thin			
			dk.gr. sLy Lam			
			@ 17.2			
	16		11.2 - 22.6 Total		5.	
			Lithology			
	17					
	18				17.9	
	19					T/DEF 17.9
						DEF 17.3
					6.	Pull #4
	20					START 7:15
						END 9:55
						TIME 35
	21				21.3	DRL 35
					7.	RAN 7.5
	22		(CONT)		(CON)	REC 7.0

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		SANDSTONE			'PULL # 4
						LOSS .8
	23		CLS, Sly., Shy., S dk. gr., v.bkn. Throughout grading into SLS.	7.		UNACC 0
	24					
	25				25.1	
471.0	26					T DEP 26.3
	27		SLS, P. LR., S., Slt. v.bkn. throughout w/occ, core loss (mech)	8		DEP 26.8 PULL #5 START 10:10 END 10:30 TIME 20 DRL 20 RAN 28 REC 3.6 LOSS 0 UNACC 0
	28				28.5	
	29					DEP 29.6
	30					T DEP 29.9 PULL #6 START 10.50 END 11.07 TIME 17 DRL 17 RAN 5.2 REC 5.6 LOSS 2.2 UNACC 3.2
	31			9		
	32					
	33					T DEP 33.6
	34		(CONT)	(cont)		

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PROJECT *GALLIPOLIS LOCKs & DAM*	INSTALLATION *ORH-CD*					SHEET *4* OF *4* SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34		S&S. R. br, S., S&k U bkn. throughout w/occ, CORE LOSS. (MECH)	~	9.	
	35					DEP 34.8
					35.3	PULL #7
						START 11:20
						END 12:10
	36				10.	TIME 5
						DRL 5
						RAN 3.6
						REC 4.2
	37					LOSS 0
460.0						UNACC 0
	38					TD5P 35.0
						DEP 38.4
	39					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 4 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) Monolith R-43 / STA 7+16 "B"

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R 44/1

5. NAME OF DRILLER Powell Norris

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN O 497.0

8. DEPTH DRILLED INTO ROCK 38.9

9. TOTAL DEPTH OF HOLE 458.1

10. SIZE AND TYPE OF BIT 4" X 5½'

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER NA

16. DATE HOLE STARTED 12/30/68 COMPLETED 1/3/68

17. ELEVATION TOP OF HOLE 497.0

18. TOTAL CORE RECOVERY FOR BORING 36.9 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSAND SLy. M-C.g., m.h., gr.			Pull #1 START 21:00 END 21:20 TIME 20 DRL 20 RAN 5.2 REC 5.0 LOSS 0 UNACC 0
	1				1	
	2					
	3					
493.1	4			3.8		
			ICL - S, R.br, greenish gr. SLK VE S. ANGLE CONTACT			
	5					DEP 5.2 T/REDS.1
	6				2.	Pull #2 START 21:35 END 22:10 TIME 35 DRL 25 RAN 10.3 REC 9.6 LOSS .3 UNACC .3
490.6	7		SANDSTONE SLy. F'g m h gr HA., hld IRR, +. 8.5-9.1 becoming Ltgr. in COLOR AT gR. in COLOR 3d 19.9	7.3		
	8				3	
	9					
	10		(CONT)	(CON)		(CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Locks & Dam

HOLE NO. R-43/1

PROJECT							
GALLipoLis Locks & DAm				INSTALLATION **ORH-CD**			SHEET **2** OF **4** SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SANDSTONE		3	PuLL #2
	11		sLy. fig, M, h.g.r. HH, hLd IRR, it 8.5-9.1		11.0	
	12		becoming Lt. gR. in CoLoR @ 9.9.			
	13				4.	
	14					
	15				14.9	T/DCP 14.9
						DEP 15.5
	16					PuLL #3
	17				5.	,START 22.15 END 22.45 Time 30. DRL 30. RAN 9.6 REC 7.9 LOSS 0 ,UNACC. 0
	18				18.5	
	19					
	20					
	21				6	
	22		(Cont)		21.9	(Cont)

PROJECT GAllipolis Locks é DAm			**INSTALLATION** ORH-CD		**Hole No.** R-43/1	
					SHEET 3 **OF** 4 **SHEETS**	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		SANdsToNe			
474.5						Pull #3
	23		CLs; S; dk. ge.			T/DEP 22.9
473.1					7.	
	24		SLS; SA, m.g., occ Shy, S-m.h. gRAding into			
472.0	25		IcL R. bR. /greenish gR., S; S.k., v. DkN ThROUgh out		25.4	DEP 25.1 Pull #4
	26					START 23:00 ENd 23:30 TIME 30 DRL 30 RHN 3.9 REC 6.9
	27				8.	LOSS Ø UNACC Ø
	28					
	29				29.1	T/DEP 29.0
	30				9	DEP 29.7 Pull #5
	31					START 7:45 ENd 8:15 TIME 30 DRL 30
	32					RHN 4.3 REC 4.2 LOSS Ø UNACC Ø
					32.7	
	33				10	
	34		(CONT)	(CONT)		DEP 34.0 T/DEP 33.9

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ELEVATION TOP OF HOLE 497.0

Hole No. R-43/1

PROJECT							
GALLIPOLIS Locks & DAM				INSTALLATION ORH-CD			SHEET 4 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34		Icl R.-br./greenish 3R, S, SLK, U.bkn Through out			PULL #6
	35				10	START 8:40 END 9:03 TIME 23min DRL 23min RAN 5.0 REC 5.0 LOSS 0 UNHCC 0
	36				36,4	
	37				11	
	38					
458.1			BOTTOM HOLE		38.9	DEP 39.0 t/DTP 38.9
	39					
	40,					

PROJECT GALLIPOLIS Locks/DAM   HOLE NO. R-43/1

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DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 4 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4" x 3½"

2. LOCATION (Coordinates or Station) Monolith R-43 / STA 10+48 "3"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R 43/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER D. HARPER / STEVE FRYE

14. TOTAL NUMBER CORE BOXES 11

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/3/89 | COMPLETED 1/3/89

7. THICKNESS OF OVERBURDEN 0 497.4

17. ELEVATION TOP OF HOLE 497.4

8. DEPTH DRILLED INTO ROCK 37.8

18. TOTAL CORE RECOVERY FOR BORING 37.8

9. TOTAL DEPTH OF HOLE 459.6

19. SIGNATURE OF INSPECTOR JMO

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.4	0					Pull #1
	1		SANDSTONE, Sky: M-C, 9, M, h, M. GR, MIC S. GR, Ch. tnd contact		1	START 1:15 / END 1:25 / TIME 10 / DRL 10 / RAN 5.1 / REC 5.1 / LOSS 0 / UNACC 0
	2					
	3					
	4				3.7	
	5					DEP/T-DEP 5.1 / Pull #2
491.3	6				2	START 1:35 / END 1:50 / TIME 15 / DRL 15 / RAN 4.7 / REC 4.7 / LOSS 0 / UNACC 0
	7		SLS, cky dk gr. S. grading			
485.7					7.3	
	8		SLS /SS.			
	9		Interld, SS-f,g, M, h, GR, SLS-MI GR, SH, S, M, h OCC. HOR, etc @ SLS. SS CONT. ch LAM ILS-.15 & ILS-11.9 (cont)			DEP/T-DEP 9.8
	10				(cont)	

ELEVATION TOP OF HOLE 497.4					**Hole No.** L 43/2	

PROJECT
GALLipolis Lock & DAm

INSTALLATION ORH-CD

SHEET 2 **OF** 4 **SHEETS**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SLS / SS	3.		Pull #3
				10.6		
	11		INTER bcld, ss-fig			
			M.h. gR., SLS -m.gR,			START 2:00
	12		SH., S-m-h OCC.			END 2:33
						Time 33
			hoR. PTg @ SLS/ss	4.		DRL 33
	13		CoNT CLS LAM			RAN 9.7
						REC 7.5
			11.0 - 11.5 & 11.7-11.9			LOSS 0
						UNAcc 0
	14		good CoNTACT			
				14.3		
	15					
	16			5.		
	17					
	18			18.0		
	19					T DEP 19.3
						DEP 19.5
	20			6.		Pull # 4
	21					
				21.2		
	22		(CoNT)	(CoNT)		(CoNT)

ENG FORM 1836-A
JUN 67

GPO 1969 OF-329-249

PROJECT GALLipolis Locks & DAm

HOLE NO. L 43/2

PROJECT,
GALLIPOLIS LOCKS & DAM

INSTALLATION
ORH-CD

SHEET 3
OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		SLS /SS			
474.7					7.	PULL #4
	23		CLS			START 3:20
						END 3:40
			dK. GR, S., OCC SLK			TIME 20
	24					DRL 20
			M SPACED PTGS			RAN 7.1
						REC 7.1
			W/HR. GR. CL. COA		24.7	LOSS 0.2
	25					UNACC 0.2
			S. dK. GR. S. SCR @ 23.1			
			V. bKN. 25.3-26.1 W/			
	26					
			0.2' CC (MECH)		8.	
470.8						DEP/T-DEP 26.6
	27		ICL			PULL #5
			R. bR /GR. GR, S			START 3:45
						END 4:03
	28		VE. bKN. THROUGHOUT			TIME 18
					28.1	DRL 18
			0.5 LC bTWEEN			RAN 3.5
	29					REC 3.5
			26.6 & 30.6 Q.S. LC			LOSS .5
			bTWN 32.8 & 37.8			UNACC .5
	30					
					9.	
	31					T/D=P 30.6
						DEP 31.1
	32				31.9	PULL #6
						START 4:56
					10.	END 5:08
						TIME 12 T/DEP=32.8
	33					DRL 12
						RAN 3.1
						REC 1.7
						LOSS .5
	34		(Cont)		(Con+)	UNACC .5 (CONT)

ENG FORM 1836-A
JUN 67

GPO 1969 OF—329-243

PROJECT
GALLIPOLIS LOCKS & DAM

HOLE NO.
R-43/2

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			DRILLING LOG (Cont Sheet)			

PROJECT Gallipolis Locks & Dam

INSTALLATION OPH-CD

SHEET 4 **OF** 4 **SHEETS**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34		ICL			Pull #6
			R. br. /gr. gr, S		10.	Pull #7
	35		VE. bkn.			START 5:33
					35.4	END 6:00
			Throughout O.S.			TIME 27
	36					DRL 27
			LC btwn 32.8			RAN 3.4
						REC 5.0
			ἐ 37.8.		11	LOSS ∅
	37					UNACC ∅
459.6						
	38					T-DEP 37.8
						DEP/ 38.1
	39					

DRILLING LOG	DIVISION ORD		INSTALLATION CRH-CD		SHEET of 4 SHEETS

1. PROJECT GALLIPOLIS Locks & DAm

10. SIZE AND TYPE OF BIT 4" & 5½"

2. LOCATION (Coordinates or Station) MONOLITH R-44 / STA 6+74 "B"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

3. DRILLING AGENCY W. G JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MObiLE

4. HOLE NO. (As shown on drawing title and file number) R-44/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE

14. TOTAL NUMBER CORE BOXES 12

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 1/3/89 COMPLETED 1/3/89

7. THICKNESS OF OVERBURDEN 0 496.6

17. ELEVATION TOP OF HOLE 496.6

8. DEPTH DRILLED INTO ROCK 39.0

18. TOTAL CORE RECOVERY FOR BORING 39.0 %

9. TOTAL DEPTH OF HOLE 457.6

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6			SANDSTONE - SLY, M, C.g., M.h. M. GR.			Pull #1
	1					START 7:30
						END 7:47
						Time .17
						DEP 17
	2				1.	RAN 4.1
						REc 4.1
						LOSS 0
						UNACC 0
	3					
					3.7	
492.5	4					DEP / T DEP 4.1
			CLS., S., dk gREEN PRObLEm AREA 0.7 LL V.S 4.1 - 4.4			Pull #2
	5					START 10:03
491.2						END 10:25
			SLS - SA, GR, M.h.			Time 22
						DEP 22
	6				2.	RAN 10.4
						REC 9.3
	7					LOSS 0.7
						UNACC 0.7
					7.0	
488.7						
	8		CLS - dk. gR, S.		3	
487.7						
	9		SLS - SA, m.h., m GR CLS. ZONS 9.1 - 9.2 gRAding			
	10					

ELEVATION TOP OF HOLE 496.6

Hole No. R-44/1

PROJECT Gallipolis Locks + Dam

INSTALLATION ORH-CD

SHEET 2 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10				.3	
			SLS - S.A. m.h., m.gr.		10.5	Pull #2
			CLS. Lens 9.1-9.2			
	11		grading SS/sLs			
			Interbdd - s.s. f.g			
			m.h., gr.; sLs-m.gr.			
			5 - ma.			
	12					
					4	
	13					
	14					T/DEP 14.1
						DEP 14.1
					14.7	
	15					Pull #3
						START 10:56
	16					END 11:13
						TIME 17
						DRL 17
					5	¼HN 9.8
						REC 10
	17					LOSS 0
						UNACC 0
	18					
					18.6	
	19					
	20				6	
	21					
474.6	22		(CONT)		(cont)	(CONT)

PROJECT Gallipolis Locks & Dam

HOLE NO. R-44/1

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PROJECT Gallipolis Locks & Dam				INSTALLATION ORH-CD		SHEET 3 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
474.6	22		CLS-dkgr,S grading into		22.2	Pull #3
	23				7.	
472.5	24		Icl-R.br./greenish gR, S. SLK, BKN. grading into			T/DEP 24.1 DEP 24.3
	25					Pull #4
	26				25.7	START 13:01 End 13:15 Time 16 DRL 16 RAN 5.3
	27					REC 4.8 LOSS Ø
					8.	UNACC Ø
	28					T/DEP 28.4
	29					
	30					DEP 29.6 Pull #5
	31					START 1330 End 13:48 Time 18
	32				9.	DRL 16 RAN 5.0 REC 5.3 LOSS Ø UNACC Ø
463.5	33		CLS Vr Rg R.br/gr,s		10	
	34		(cont)		(cont)	

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		PROJECT GALLipolis Locks & DAM	INSTALLATION ORH-CD			SHEET 4 OF 4 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34		CLS VCRg R.bR.lgR.S.			T/DEP 34.2
						Pull # 5
						DEP 34.6
	35					Pull #6
					10.	START 14:03
						END 14:19
	36					TIME 16
						DRL 16
					36.5	RAN 5.0
	37					REC 4.8
						LOSS ∅
						UNACC ∅
	38				11.	
457.5	39					T/DEP 39.0
						DEP 39.6
	40					
	41.					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + D

2. LOCATION (Coordinates or Station) MONO R-99 STA 6+92B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-99/2

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 997.3

8. DEPTH DRILLED INTO ROCK 38.5

9. TOTAL DEPTH OF HOLE 458.8

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/9/89 COMPLETED 1/9/89

17. ELEVATION TOP OF HOLE 497.3

18. TOTAL CORE RECOVERY FOR BORING 38.5

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.3			SAND STONE			Pull #1
	1		Sky m-cg, mh, gr			START 9:36
						END 9:50
	2				1	TIME 19 min
						DRL 19 min
	3					RAN 9.9
						REC 9.9
	4				3.7	LOSS Ø
						UNACC Ø
492.3	5					DEP 9.9
			CLS			Pull #2
496.9	6		gr. s.		2	START 10:00
			S&S			END 10:16
			", sq s-m.H. F.gr			TIME 16 min
490.1	7				7.4	DRL 16 min
			SS			RAN 9.9
	8		F.g shy, m.h, m.gr			REC 9.9
					3	LOSS Ø
	9					UNACC Ø
						DEP 9.8
	10					Pull #3
	11				11.0	START 10:30
						END 10:55
	12					TIME 15 min
						DRL 15 min
	13				4	RAN 7.7
						REC 7.7
	14					LOSS Ø
					14.8	UNACC Ø
	15					
	16				5	
	17					DEP 17.5
	18				18.0	Pull #4
					6	START 11:17
	19					END 12:20
	20			(CONT)		(CONT) TIME 57 min (CONT)

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PROJECT Gallipolis Lock+Dam   HOLE NO. R99/2

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE		497.3			Hole No. R-44/2	

PROJECT: Gallipolis Lock & Dam   INSTALLATION: OPH-CP   SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					PULL #4
	21				6	DRL 57min
						RAN .9.0
	22				21.7	REC 9.0
	23					LOSS Ø
	24					UNACC Ø
	25				7	
471.8					25.9	
470.8	26		CLS S-m.h. m.GR, SHy w/occ SLS LAM. hor. cl			DEP 26.5
	27		ICL		8	PULL #5 START 12:40 END 12:55
	28		P. BR, S, SLK. V BRN			TIME 15min DRL 15min
	29				29.1	RAN 3.7 REC 3.5 LOSS 1?
	30					UNACC 1? DEP 30.2
	31				9	PULL #6 START 1:34
	32					END 1:53 TIME 19min DRL 19min
	33				32.6	RAN 3.8 REC 35 LOSS 3
	34				10	UNACC 3 DEP 33.9 PULL #7
	35					START 2:07 END 2:25
	36				36.3	TIME 18min DRL 18min
	37					RAN 3.4
	38				11	REC 3.4 LOSS Ø
458.8			Bottom Hole		38.8	UNACC Ø
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A   (ER 1110-1-1801)   GPO 1966 OF-629-603   PROJECT: Gallipolis Lock+Dam   HOLE NO. R-44/2

DRILLING LOG	DIVISION ORD			INSTALLATION ORN-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO R-45 STA 6+32 B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-45/1

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 496.6

8. DEPTH DRILLED INTO ROCK 37.4

9. TOTAL DEPTH OF HOLE 459.2

10. SIZE AND TYPE OF BIT 4X54L

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/4/89 COMPLETED 1/4/89

17. ELEVATION TOP OF HOLE 496.6

18. TOTAL CORE RECOVERY FOR BORING 37.9 %

19. SIGNATURE OF INSPECTOR LMN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6	1		SANDSTONE			Pull #1
			Sly, m-c.g., m.H, m.g R		1	START 11:16
	2					END 11:40
						TIME 24min
	3					DRL 24min
993.1				3.7		RAN 4.7
	4		Cls/Icl			REC 4.4
			m. dk. gr-R. Br S		2	LOSS 0.3
						UNACC 0.3
						DEP+T/DEP 4.7
	6					Pull #2
						START 11:43
	7					END 12:00
				7.4		TIME 17min
488.5	8					DRL 17min
			SANDSTONE		3	RAN 10.0
	9		F.g, m.h, Sly m.g.s, sls L Am			REC 10.0
			Becoming mass below 10.1			LOSS 0 1
	10					UNACC 0
	11			11.0		
	12					
	13				4	
	14					
	15			14.8		DEP+T/DEP 14.7
						Pull #3
	16				5	START 12:55
	17					END 13:02
						TIME 7min
	18			18.0		DRL 7min
					6	RAN 9.3
	19				(CONT)	REC 9.1
	20					LOSS .2
						UNACC .2

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Lock + Dam

HOLE NO. R-45/1

PROJECT						
GALLIPOLIS Lock+DAM			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			PuLL #3
	21				6	
	22				21,7	
	23					
	24				7	DEP+T/DEP 24.0
471.9	25					PuLL #4
	25		ICL		25.5	START 13:31
	26		R-BR, S, SLK, BKN			END 14:18
	27		grading into CLS			TimE 47.min
	28				8	DRL 47min
	29					RAN 7.5
	30				29,1	REC 7.5
	31				9	LOSS Ø
	32					UNACC Ø
	33				32.6	DEP+T/DEP 31,5
	34					PuLL#5
461.2	35				10	START 14:37
	36		CLS		36.2	END 15:18
	37		VERg, R.bR/ge.S		11	TimE 41.0 min
459.2	37		Bottom HoLE		37.4	DRL 41.0 min
	38					PAN 5.9
	39					REC 5.9
	40					LOSS Ø
	41					UNACC Ø
	42					DED+T/DEP 37.4
	43					
	44					

DRILLING LOG

DIVISION	INSTALLATION	SHEET 1
ORD	ORH-CD	OF 2 SHEETS

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
Mono R-95 STA 6+00 B

3. DRILLING AGENCY
W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number)
R-95/2

5. NAME OF DRILLER
Dave Harper

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN O 997.2

8. DEPTH DRILLED INTO ROCK 38.2

9. TOTAL DEPTH OF HOLE 459.0

10. SIZE AND TYPE OF BIT 9 x 5 ½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/4/89 COMPLETED 1/4/89

17. ELEVATION TOP OF HOLE 997.2

18. TOTAL CORE RECOVERY FOR BORING 38.0

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
997.2	1		SANDSTONE			Pull #1
	2		Sty, m.-cg., m.h, gr		1	START 2:50
	3					END 300
	4				3.0	TIME 10min
						DRL 10min
						RAN 4.8
						REC 4.8
						LOSS 0
						UNRE 0
992.9	5					DEP+T/DEP 4.8
	6		SLS		2	Pull #2
			Sa, s-m.H, 111.gr			START 3:10
	7		0.3 S.gr cl. 4.8-5.1		7.1	END 3.22
	8		V. Bkn w/sm. SS lens			TIME 12min
						DRL 12min
	9		5.9- 7.3 w/0.4 1.c (Rd area)		3	RAN 4.6
483.7						REC 4.0
						LOSS 0.9
						UNRE 0.9 T/DEP 9.2
						DEP 9.4
	10		SANDSTONE		10.7	Pull #3
	11		Fig., Sty, m.h, m.gr			START 3:43
	12		CLS LEN 10.7-11.9		4	END 4:15
	13		Becoming mass, below			TIME 32min
	14		11.9		14.1	DRL 32min
	15					RAN 9.8
	16				5	REC 9.7
	17					LOSS 0.3
	18				17.0	UNRE 0.3
	19				6 (cont)	
	20		(cont)			DEP+T/DEP 19.2
						Pull #4
						(cont)

							SHEET 2
PROJECT Gallipolis Lock + Dam			INSTALLATION ORH-CD				OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			
475.7	21				6	Pull #9
						START 4:35
					21.5	END 5:30
	22		CLs			TIME 55min
			S-m.h, m.gr, shy w/			DRL 35min
	23					RAN 8.9
			Occ SLS LAM, hoa, CL		7	REC 9.5
	24					LOSS Ø
			coa, ptgs throughout			UNACC 0
	25				25.1	
471.2	26					
			ICL			
	27				8	
			R.DR, S, SLK U.bkn.			
	28					
					28.7	T/DEP 28.7
	29					Pull #5
						START 6:50
	30					END 7:15
						TIME 25min
	31				9	DRL 25min
						RAN 5.5
	32					REC 4.0
					32.5	LOSS 0.4
	33					UNACC 0.4 T/DEP 33.1
						DEP 33.6
	34				10	Pull #6
						START 7:35
	35					END 7:56
						TIME 21min
	36				36.2	DRL 21min
						RAN 4.6
	37				11	REC 4.8
						LOSS 0.1
459.2	38		Bottom Hole		38.0	UNACC 0.1 T/DEP 38.0
						DRILL
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1980 OF - 628-603

PROJECT	HOLE NO.
Gallipolis Lock + Dam	R-95/2

DRILLING LOG

DIVISION ORD	**INSTALLATION** ORH-CD	**SHEET** 1 of 4 **SHEETS**

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONOLITH R-46 1STA

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-46/1

5. NAME OF DRILLER POWELL NORRIS

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 497.5

8. DEPTH DRILLED INTO ROCK 40.1

9. TOTAL DEPTH OF HOLE 457.4

10. SIZE AND TYPE OF BIT 4" Y 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A | **DISTURBED** N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/4/89 | COMPLETED 1/4/89

17. ELEVATION TOP OF HOLE 497.5

18. TOTAL CORE RECOVERY FOR BORING 40.1 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.5			SANDSTONE Sly., m-c.g., m.h. m.gr		1	Pull #1 START 4:05 END 4.25 TIME 20 DRL 4.7 KAN 4.7 REC 3.7 LOSS 1.0 UNACC 0
494.5	3		CLS/ICL m. dkgr., R.br, S. 0.4 btwn 4.7 & 8.6 1.0 LC btwn 3.0 & 4.7, w/brn areas	3.6		T/DEP DEP 6.0
	6				2.	Pull #2 START 4:35 END 5:20 TIME 45 DRL 45 KAN 9.0 REC .5 LOSS 3.4 UNACC 0 T/DED 15.1
	7.9			7.9	3	
488.9			SANDSTONE			
	11		(CON'T)	(con't)	T/DED 10

ENG FORM 1836
MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT GALLIPOLIS LOCK & DAM   HOLE NO. R-46/1

PROJECT: Gallipolis Lock & Dam

INSTALLATION: ORH-LD

SHEET 2 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SANDSTONE		3	T/Dep. 10.0
						PULL #2
	11		Ag., m. h, sly n.g.s sLs, Lam 9.5 To 10.4 S.S. becoming mass below 10.4		11.6	START 4:35 END 5:20 TIME 45 DRL 45 RAN 9.0 REC 10.0 LOSS 0.4 UNACC 0
	12					
	13					
	14				4	
	15					DEP 15.1
	16				15.4	PULL #3
	17				5	START 5:40 END 6:10 TIME 30 DRL 30 RAN 10.0 REC 8.1 LOSS 1.1 UNACC 0
	18					
	19				19.1	
	20				6	
	21					
	22		(CONT)		(CONT)	(CONT)

ELEVATION TOP OF HOLE					497.5	Hole No. R-46/1

PROJECT **GALLIPOLIS LOCK & DAM** | INSTALLATION **ORH-CD** | SHEET 3 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		SLS/CLS		6	PULL #3
	23		Interbed., m-dk gR., s-m.h. acc Shy		22.9	
	24					
						T/DEP 24.3
	25				7	DEP 25.0
471.5	26					PULL #4
			ICL		26.4	START 6:35
	27		S., R. bR., SLK V. bKN throught			END 8:00
						TIME 85
						DRL 45
						RAN 8.6
						REC 10.5
	28					LOSS 0
						UNACC 0
					8	
	29					
	30				30.3	
	31					
	32				9	
						T/DEP 32.7
	33					
					33.7	DEP 33.6
	34		(CONT)		10 (CONT)	PULL#5 (CONT)

PROJECT GALLIPOLIS LOCK & DAM | HOLE NO. R-46/1

PROJECT   GALLIPOLIS LOCK & DAM   INSTALLATION   ORH-CP   SHEET 4   OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34		ICL			Pull #5
	35		S, R, bR, SLK			START 9:10
			U. bKN thRought			END 9:50
						TIME 40
					10	DRL 40
	36					RAN 6.5
						REC 3.1
						LOSS 0.2
	37					UNACC 0
						TDEP 37.6
					37.3	
	38					
	39				11.	
457.9	40		Bottom Hole		40.1	DCP 40.1 / TDEP 40.1
						Pull # 6
	41					START 10:45
						END 11:00
					DCP 41.1	TIME 25
						DRL 25
	42					RAN 1.0
						REC 4.6
						LOSS 0
						UNACC 0

ENG FORM 1836-A   JUN 67   GPO: 1969 OF—329-243   PROJECT   GALLIPOLIS Lock & Dam   HOLE NO. R-46/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MOND R-46 STA 5+58 B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-46/2

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0   497.2

8. DEPTH DRILLED INTO ROCK 39.2

9. TOTAL DEPTH OF HOLE 458.0

10. SIZE AND TYPE OF BIT 4 X 5½ "

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A | **DISTURBED** N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/20/89 COMPLETED 1/20/89

17. ELEVATION TOP OF HOLE 497.2

18. TOTAL CORE RECOVERY FOR BORING 39.2

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			SANDSTONE		Box 1	Pull #1
	1		m.h. gr m.g FLAGGY			START 14.26
						END 14.30
	2		To MASS 1.3 STa 2.06			TIME 4min
						DRL 4min
	3		0.8			RAN —
					3.5	REC 4.9
	4				Box 2	LOSS ∅
492.3	5					UNACC ∅
						DEP + TIDEP 4.9
			CLS			Pull #2
	6		S, -m.h, gr VCRYS 4.9-3.9			START 14.36
						END 14.37
	7		VCRT FRAC w/ SLK 6.6 to		6.9	TIME 11 min
						DRL 11 min
	8		5.5		Box 3	RAN — UNACC ∅
488.5						REC 5.0
	9		CL/SLS			LOSS ∅
			grading to SL w/ depth			DEP + TIDEP 9.9
						Pull #3
	10				10.4	START 14.54 END 15.02
	11		m.h. gr, MASSIVE		Box 4	TIME 8min
			w/ interbdd fg SS. up to			DRL 8min
	12					RAN —
			0.6 gradational contact			REC 4.7
	13					LOSS ∅
						UNACC ∅
	14				14.1	
	15				Box 5	TIDEP 14.7 DEP 14.5
481.6						Pull #4
	16		SANDSTONE			START 15.09
			m.h. gr mg MASSIVE			END 15.14
	17					TIME 5min
			Sh PARTINGS 16.6 + 17.0		17.5	DRL 5min
	18				Box 6	RAN —
			0.1 bkn ZO w/ SLICK			REC 5.0
	19					LOSS ∅
			FIL AT END OF RUN			UNACC ∅
	20		(cont)	(cont)		TIDEP 19.6 DEP 19.5

ELEVATION TOP OF HOLE	Hole No. R-96/2

PROJECT	INSTALLATION	SHEET 2
GALLIPOLIS LOCK + DAM	ORH-CD	OF 2 SHEETS

ELEVATION TOP OF HOLE 497.2

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.7	20		SANDSTONE		6	PULL #5
	21		CLS		21.0	START 3:40
	22		M.h.gr, solid w/			END 4:00
						TIME 20min
			0.1, softer cl.zone @ 23.0			DRL 20min
	23				7	RAN 5.2
			BECOME SH			REC 5.2
	24					LOSS Ø
						UNACC Ø
	25				29.7	DEP 24.8 T/ DEP 29.6
471.5						PULL #6
	26					START 4:05
			ICL			END 4:35
	27		n/H, R-gr, SLK more		8	TIME 30min
						DRL 30min
	28		MASS w/depth		28.2	RAN —
						REC 5.2
	29					LOSS Ø
						UNACC Ø
	30				9	DEP 25.8 T/DEP 29.9
						PULL #7
	31					START 4:55
						END 5:15
	32				31.7	TIME 20min
						DRL 20min
	33					RAN 5.1
					10	REC 4.1
	34					LOSS —
						UNACC — T/DEP 34.1
	35				34.8	DEP 34.9
						PULL #8
	36				11	START 5:35
						END 5:55
	37				37.2	TIME 20min
						DRL 20min
	38					RAN —
					12	REC 5.1
458.0	39		BOTTOM HOLE		39.2	LOSS —
						UNACC — T/DEP 39.2
	40					DEP 39.7
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67 (ER 1110-1-1801)   GPO 1960 OF-628-603

PROJECT	HOLE NO.
GALLIPOLIS Lock + DAM	R-96/2

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4⅞ S½

2. LOCATION (Coordinates or Station) Monu R-47/1 STA 5+48.0 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

3. DRILLING AGENCY W.G. Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

4. HOLE NO. (As shown on drawing title and file number) R-47/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

5. NAME OF DRILLER Dave Harper

14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/20/89 COMPLETED 1/20/89

7. THICKNESS OF OVERBURDEN @ 497.2

17. ELEVATION TOP OF HOLE 497.2

8. DEPTH DRILLED INTO ROCK 37.2

18. TOTAL CORE RECOVERY FOR BORING 37.2

9. TOTAL DEPTH OF HOLE 460.0

19. SIGNATURE OF INSPECTOR TMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			SANDSTONE		Box 1	Pull #1
496.5			m.h. gr. m.g. FL A994			START 8:00
	1		ICL			END 8:20
			S, R-gr mottled solid			TIME 20min
	2					DRL 20min
			To 4.9 w/0.6 Acc loss			RAN —
	3					REC 4.3
			0-4.9, bkn & crumbly		3.7	LOSS 0.6
	4				Box 2	UNACC 0.6
			From 4.9-8.0, w/0.5			TIDEP 4.4
	5					DEP 5.0
			L.C. 4.9 to 9.8, 1.0 LC			Pull #2
	6					START 8:30
			9.8-10.8 Toprun bec			END 8:42
	7					TIME 12min
			m.h, more solid & slt		7.8	DRL 12min
	8				Box 3	RAN —
			below 10.8			REC 4.4
	9					LOSS 0.5
			Grading to cls			UNACC 0.5
	10		AT 12.8			DEP/TIDEP 7.8
						Pull #3
	11					START 8:53
						END 9:10
	12				11.5	TIME 17min
489.4					Box 4	DRL 17min
	13		CLS			RAN —
						REC 3.5
	14		slt, m.h gr.			LOSS 1.0
						UNACC 1.0
	15					DEP 14.4 TIDEP 14.3
						Pull #4
	16				16.0	START 9:25
480.4						END 10:06
	17		SANDSTONE		Box 5	TIME 41min
			m.h. gr, fg, mass			DRL 41min
	18					RAN —
						REC 9.3
	19		found in /ss 18.0			LOSS 0
						UNACC 0
	20		(CONT)		19.8	(CONT)

PROJECT Gallipolis Lock + Dam   HOLE NO. R-47/1

						SHEET 2
PROJECT Gallipolis Lock + Dam			INSTALLATION ORH-CD			OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		Box 6	Pull #4
	21					
475.2	22					
	23		SLS Sh, m.h, gr, solid		23.3	DEP/T/DEP 23.6
	24		0.4 CLEAR VERT FRAC		Box 7	Pull #5 START 10:18
	25		473.6			END 10:40
471.5						TIME 22 min
	26		ICL			DRL 22 min RAN —
	27		S. - m.h., R. gr occ SLS		27.0	REC 6.0
	28		0.2 LC 23.6 - 29.8,		Box 8	LOSS 0.2 UNACC 0.2
	29		0.6 LC 29.8 - 37.2			
	30		0.2 VERY SOFT 29.6 - 29.8			T/DEP 29.8
					30.7	DEP 30.4
	31					Pull #6
	32				Box 9	START 10:55 END 11:30
	33					TIME 35 min DRL 35 min
	34					RAN —
	35				34.5	REC 6.8 LOSS 0.6
	36				Box 10	UNACC 0.6
460.0	37		BOTTOM HOLE		37.2	T/DEP 37.2
	38					DEP 37.9
	39					
	40					
	41					
	42					
	43					
	44					

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DRILLING LOG	DIVISION ORH-CD	INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO R-47 STA 5+16 B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-47/2

5. NAME OF DRILLER DOWELL NORRIS

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.2

8. DEPTH DRILLED INTO ROCK 38.4

9. TOTAL DEPTH OF HOLE 458.8

10. SIZE AND TYPE OF BIT 4 X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL B. 57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/20/89 COMPLETED 1/23/89

17. ELEVATION TOP OF HOLE 497.2

18. TOTAL CORE RECOVERY FOR BORING 384

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			SANDSTONE M.H. gr, m.g. bkn in sect		Bor 1	PULL #1 START 6:50 END 7:15 TIME 25min DRL 25min RAN 4.9 REC 4.2
494.5	2		0.1 - 0.5			
	3		ICL			
	4		VS-S-V.S. / SLK bkn		3.7	LOSS Ø T/DEP 3.5 UNACC Ø
	5		crumbly 2.7-4.2 0.4 sev		Bor 2	DEP 4.9 PULL #2
	6		bkn @ S.S gradual cont.			START 7:25 END 7:40
	7					TIME 15min DRL 15min T/DEP 6.9
	8				7.5	RAN 4.0 REC 5.0 LOSS Ø 1
488.3	9		CLS		Bor 3	UNACC Ø DEP 8.9 PULL #3
	10		Sh, m.h. gr, grad to			START 8:40 END 8:20 TIME 20min
	11		Ch / Sh below 11.0		11.0	DRL 20min T/DEP 8.9 RAN 6.0
	12		vert clean frac 10.1 -		Bor 4	REC 0.9 LOSS 0.6
	13		11.0			UNACC 0.6
	14					PULL #4 START 9:45
	15				14.8	END 9:50 TIME 5min DEP 13.9
	16				Bor 5	DRL 5min RAN 2.9 T/DEP 15.9
	17					REC 5.2 LOSS 0.6
479.6						UNACC 0.6
	18		SANDSTONE m.h. gr. mass			DEP 17.8 PULL #5
	19				18.8 Box 6	START 10:30
	20		(CONT)		CONT	(CONT) T/DEP 19.9

PROJECT GALLIPOLIS LOCK & DAM HOLE NO. R-47/2

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 497.2		**Hole No.** P-47/2	
PROJECT GALLIPOLIS LOCK & DAM			**INSTALLATION** ORH-CD			**SHEET** 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		Box 6	PULL #5
476.3	21					END 10:45
			CLS		21.4	TIME 15 min
	22				Box 7	DRL 15 min
			Sh, m.H, gr. mas			RAN —
	23					REC 4.0
	24					LOSS Ø
						UNACC Ø
	25				24.9	DEP 24.9
						PULL #6
	26				Box 8	START 7:15
						END 7:30
	27					TIME 15 min
						DRL 15 min
	28					RAN 5.0
						REC 5.0
468.2	29				28.5	LOSS Ø
			ICL			UNACC Ø
	30				Box 9	T/PEP + DEP 29.8
			Mottled, R.Br, S.-m.h			PULL #7
	31					START 8:20
			0.8 LC @ 29.0 -29.08			END 8:45
	32					TIME 25 min LOSS Ø
						DRL 25 min UNACC Ø
	33				32.7	RAN —
						REC 4.0
	34				Box 10	T/PEP + DEP 33.8
						PULL #8
	35					START 8:59
						END 9:15
	36				36.1	TIME 16 min
						DRL 16 min
	37				Box 11	RAN — UNACC Ø
						REC 4.6
	38					LOSS Ø
458.8			Bottom Hole		38.4	DEP + T/DEP 38.4
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67 (ER 1110-1-1801)	GPO 1960 OF - 625 - 903	**PROJECT** GALLIPOLIS LOCK / DAM	**HOLE NO.** P-47/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4/5½
2. LOCATION (Coordinates or Station) MONO R-48 STA 5+06.3 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) R-48/1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER DAVE HARPER / STEVE FRY	14. TOTAL NUMBER CORE BOXES 10
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE — STARTED 1/20/89 — COMPLETED 1/20/89
7. THICKNESS OF OVERBURDEN Ø 497.3	17. ELEVATION TOP OF HOLE 497.3
8. DEPTH DRILLED INTO ROCK 37.9	18. TOTAL CORE RECOVERY FOR BORING 37.9
9. TOTAL DEPTH OF HOLE 459.4	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
497.3			SANSTONE. M.H., gr, m.g, bkn in section 0.1 - 0.6		1	PULL #1 START 12:25 END 12:43 TIME 18 min DRL 18 min RAN —
494.5	2					REC 4.3
	3		ICL		3.3	LOSS Ø UNACC Ø
	4		S, -m.h., R. -gr, occ SLK			T/DEP 4.3
	5		solid to 9.0 w/0.2			DEP 5.0 PULL #2 START 12:50
	6		LC. 4.3-9.0, SEU bkn 9.0-		2	END 1:03 TIME 13 min
	7		11.6 + U.S to 13.1		7.0	DRL 13 min RAN — REC 4.5
	8					LOSS 0.2
	9				3	UNACC 0.2 T/DEP 9.0 DEP 9.3
	10					PULL #3 START 1:15 END 1:45
	11				10.6	TIME 30 min DRL 30 min RAN —
	12				4	REC 7.4
484.2	13		CL / SLS			LOSS 0.5 UNACC 0.9
	14		m.h. gr, solid grading		13.4	
	15		sq 0.9 loss in ICL 9.0			
	16		- 17.5		5	
480.3	17		SANDSTONE			T/DEP 17.5
	18		M.H., gr, mass, m.g.			
	19				18.9	DEP 18.9
	20		(CONT)		6 (CONT)	PULL #4 START 2:25 END 3:03 (CONT)

	ELEVATION TOP OF HOLE					Hole No. L-48/1	
	4973						

PROJECT: GALLIPOLIS LOCK; DAM

INSTALLATION: ORH-CD

SHEET 1 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			TIME 38min
476.1	21				6	DEL 38min
						RAN —
	22		CLS			REC 5.8
			Sh, m.h. gr, slk @			LOSS 0.2
	23				22.7	UNACC 0.2
			23.6 AND 26.0, 0.2			DEP 23.6 T/DEP 23.5
	24		Loss 17.5 - 23.5		7	PULL #5 T/DEP 24.2
	25					START 3:43
	26					END 4:00
470.8					26.3	TIME 17min
	27		ICL			DPL 17min
						RAN —
	28		M.H, R. SLK w/ccu		8	REC 5.4
						LOSS 0.6
	29		bkn 20s w/1.8 S. 20			UNACC 0.6
	30		w/1.8 S.20 @ 27.7; 0.6		29.9	
	31		LC 470.2 - 469.2, prob			DEP 33.1
	32		in seu bkn 20 @ END		9	PULL #6
						START 4:37
	33		OF RUN 0.2 Loss 464.2			END 4:55
	34		- 459.4		33.9	TIME 18min
						DEL 18min
	35					RAN 4.7
						REC 0.8
	36				10	LOSS 0.2
	37					UNACC 0.2
459.4	38		Bottom HOLE		37.9	T/DEP 37.9
	39					DEP 38.9
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67   (ER 1110-1-1801)   GPO 1980 OF - 628 - 603

PROJECT: GALLIPOLIS LOCK; DAM   HOLE NO. L-48/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono R-48 STA 4+74 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-48/2

5. NAME OF DRILLER A. Tice

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.1

8. DEPTH DRILLED INTO ROCK 37.8

9. TOTAL DEPTH OF HOLE 459.3

10. SIZE AND TYPE OF BIT 4 ½5½ "

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A

DISTURBED N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/23/89 COMPLETED 1/23/89

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 37.9

19. SIGNATURE OF INSPECTOR JMD

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
	1		SANDSTONE			Pull #1
495.7			m-cg, m.h., m.gr, bkn s. pieces		Box 1	START 9:42
	2		ICL			END 9:57
						TIME 15 min
	3		R.br., s.-mh., slk, ve.s			DRL 15 min
						RAN ---
	4		gr. cl. @ 1.4 bkn. 1.4-		4.1	REC 2.8 T/DEP 3.3
			3.3 w/0.5 l.c. bkn			LOSS 0.5
	5					UNACC 0.5 DEP 3.7
			5.7-8.2 w/0.8 l.c.			Pull #2
	6				Box 2	START 10:00
			bkn. 8.2-9.2 w/0.8			END 10:24
	7		l.c.			TIME 24 min
						DRL 24 min UNACC 0.8
	8					RAN ---
					8.2	REC 4.1
	9					LOSS 0.8
						DEP+T/DEP 8.2
	10				Box 3	Pull #3
						START 10:55
	11					END 11:11
						TIME 16 min
	12				11.9	DRL 16 min
						RAN ---
	13					REC 4.4
483.7					Box 4	LOSS 0.8
	14		CLS			UNACC 0.8
			sly., s.-mh., m.-dk.gr			DEP+T/DEP 13.4
	15		0.1 s.gr.cl 15.1-15.2 !			Pull #4
481.6			15.4 -15.5			START 11:20
	16		SANDSTONE		16.2	END 11:32
			sly., fig., mh, m.gr			TIME 12 min
	17		bkn. 16.0-16.2 s.gr.cl.			DRL 12 min
			16.3-16.4 : cls 16.6			RAN ---
	18		-16.7 bkn ss w/frag 17.8-		Box 6	REC 5.1
478.4			17.9 : s. cls 17.9-18.1			LOSS ⊘
	19		SLS			UNACC ⊘
			cly., s.-mh., m.gr		19.8	DEP+T/DEP 18.5
	20		(cont)			Pull #5
						START 12:25 (cont)

PROJECT Gallipolis Lock & Dam | HOLE NO. R-48/2

PROJECT Gallipolis Lock & Dam		INSTALLATION OPH-CD				SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLs (cont) Cls. 18.7-19.2 grading into			Pull #5
476.4						END 12:35
	21		Cls		7	TiME 10 min Loss Ø
	22		S.-m.h.- m.-dk.gr., shy			DeL 10 min uNACC Ø
						RAN —
	23		bKN. 22.1 - 27.4			REC 5.0
					23.5	DEPT/DEP 23.5
	24		grading			Pull #6
						START 12:42
472.1	25				8	END 12:55
			ICL			TiME 13 min
	26					DeL 13 min
			MOTTED R. bR.,			RAN —
	27					REC 5.0
			S.-m.h, sLKs		27.3	LOSS Ø
	28					uNACC Ø
						DEPT/DEP 28.5
	29				9	Pull #7
						START 13:10
	30					END 13:13
					30.7	TiME 13 min
	31					DeL 13 min
						RAN —
	32					REC 5.0
					10	Loss Ø
	33					uNACC Ø
						DEPT/DEP 33.5
	34				34.2	Pull #8
						START 13:49
	35					END 14:04 Loss Ø
						TiME 20 min uNACC Ø
	36				11	DeL 20 min
						RAN —
	37					REC 4.3
459.3			Bottom Hole		37.8	DEPT/DEP 37.8
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO 1969 OF—328-243

| PROJECT Gallipolis Lock & Dam | HOLE NO. R-48/2 |

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET / OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono R-49 STA 4+64.8

3. DRILLING AGENCY W. G. Jaomcs

4. HOLE NO. (As shown on drawing title and file number) R-49/1

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.3

8. DEPTH DRILLED INTO ROCK 39.3

9. TOTAL DEPTH OF HOLE 458.0

10. SIZE AND TYPE OF BIT 4x5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN / DISTURBED N/A / UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/20/89 COMPLETED

17. ELEVATION TOP OF HOLE 497.3

18. TOTAL CORE RECOVERY FOR BORING 39.3 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.3			SANDSTONE		Box 1	Pull #1
	1		m.h. gr, m.g bkn in sect			START 5:30
						END 5:34
	2		0.1 - 0.9			TIME 4min
						DRL 4min
494.6						RAN 4.9
	3		ICL			REC 4.5
			S, -m.h bkn w/0.4 loss			LOSS .4
	4				3.9	UNACC .4
			2.7 - 4.9 bce, m.h. + solid			
	5				Box 2	DEP/TIDEP 4.9
			4.9 - 6.2			Pull #2
491.1	6					START 5:50
	7		CLS			END 6:03
			m.h, gr, slt l.o lc 9.0			TIME 13min
	8				7.8	DRL 13min
			-11.7 p6 lc.4 at 4.9-			RAN 5.3
	9				Box 3	REC 4.11
			9.0, l.o lc 9.0-11.7			LOSS .4
	10					UNACC .4
						TIDEP 9.8
	11					DEP 10.2
	12					Pull #3
						START 6:16
	13				11.5	END 6:25 TIDEP 11.7
						TIME 9min
	14				Box 4	DRL 9min
						RAN 4.4
483.6						REC 1.7
	15		CL/CLS			LOSS 1.0
			m.h. gr, minss w/sa			UNACC 1.0 DEP 14.6
	16		20, bkn 15.4 -17.3 w/0.9		16.3	Pull #4
			loss, poss, cl 20, vert			START 6:40 REC 4.9
	17		frac .4m ech lc.		Box 5	END 6:51 LOSS 0.9
479.7						TIME 11min UNACC 0.9
	18		SANDSTONE			DRL 11min
			m.h. gr. m.g. w/0.6			RAN 2.9
	19		sl lcls 18.2			TIDEP 17.3
477.7						DEP 17.5
	20		CLS (cont)		cont	Pull #5
						START 7:07
						END 7:30
						TIME 23min
						DRL 23min
						RAN 3.1

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam HOLE NO. R-49/1

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE **497.3**			Hole No. **R-49/1**
PROJECT **Gallipolis Lock & Dam**			INSTALLATION **ORH-CD**			SHEET **2** OF **2** SHEETS
ELEVATION a	**DEPTH** b	**LEGEND** c	**CLASSIFICATION OF MATERIALS** (Description) d	**% CORE RECOV. ERY** e	**BOX OR SAMPLE NO.** f	**REMARKS** (Drilling time, water loss, depth of weathering, etc., if significant) g

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOV	BOX/SAMPLE NO	REMARKS
	20		CLS		Box 20.5	Pull #5
	21					REC 5.3
			Sh, m.h - scu hln. 19.6			LOSS 0.0
	22				Box 6	UNACC 0.0
			20.5, w/0.7 ICL 23.1			
	23					T/DEP + DEP 22.6
			0.7 Loss 22.6 - 26.2			Pull #6
	24					START 7.45
						END 8.10 LOSS 0.7
	25				24.3	TIME 25min UNACC 0.7
						DRL 25min
	26				Box 7	RAN 3.5
						REC 2.9
	27					DEP 26.1
						START 9:00 Pull #7 T/DEP 26.2
	28					END 9:10
						TIME 10.min
468.3	29				28.5	DRL 10min UNACC Ø
						RAN 3.4
						REC 3.1
			ICL			LOSS Ø
	30				Box 8	T/DEP 29.3 DEP 29.5
			m.h, R - yR solid			Pull #8
	31					START 9:21
			0.2 ICL btwn 29.3 & 34.6			END 9:35
	32					TIME 19min
					32.0	DRL 14min
	33					RAN 5.1
						REC 5.0
	34				Box 9	LOSS 0.3
						UNACC 0.3
	35					DEP + T/DEP 34.6
						Pull #9
	36				35.9	START 7.55
						END 10:05
	37					TIME 10min
					Box 10	DRL 10min T/DEP 36.7
	38					RAN 4.2
						REC 5.0
458.0	39					LOSS 0.3
			Bottom Hole		39.3	UNACC 0.3 DEP 38.8
	40					Pull #10
						START 9:35
	41					END 10:05
						TIME 10min
	42					DRL 10min
						RAN 4.7
	43					REC 4.7
						LOSS Ø UNACC Ø.
	44					T/DEP + DEP 39.3

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1960 OF - 628 - 602

PROJECT **Gallipolis Lock & Dam**   HOLE NO. **R-49/1**

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono R-49 STA 4+32R

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-49/2

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0   496.7

8. DEPTH DRILLED INTO ROCK 36.7

9. TOTAL DEPTH OF HOLE 460.0

10. SIZE AND TYPE OF BIT 4 x 5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/23/89 COMPLETED 1/23/89

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING 36.7

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE			Pull #1
	1		m-c.g, m.h, m.g, m.gr		Box 1	START 4:05 END 4:20
495.1			bkn into sm. pieces (may 0.1)			TIME 15min LOSS 0
	2		ICL			DRL 15min RAN — UNACC 0
	3		R. bR, S, SLK VE.S. gu.		3.5	REC 4.9
	4		CL. 1.3-1.6 gR, SLY		Box 2	DEP+T/DEP 2.8 Pull #2 START 9:25 END 9:40
	5		4.8 -7.3 : 1", gR CL @ 7.3			TIME 15min DRL 15min RAN —
	6					REC 1.9 LOSS 0
489.4	7					UNACC 0 T/DEP 6.8
	8		SANDSTONE		7.8	DEP 8.2
	9		SLY, F.g., m.h., m.gR.		Box 3	Pull #3 START 4:45 END 4:50
	10		MASS, gR.CL. COQ			TIME 5min DRL 5min RAN 4.9
	11		CONTACT		11.5	REC 5.1 T/DEP 11.9
	12				Box 4	LOSS 0 UNACC 0
	13					DEP 13.1
	14					Pull #4
	15				15.1	START 5:10 END 5:20
	16				Box 5	TIME 10min DRL 10min RAN 5.6 T/DEP 16.4
479.4	17					REC 5.1 LOSS 0
	18		SLS			UNACC 0
	19		S. -m. h., m. -dk.gR. grading		18.9 Box 6	DEP 18.7 Pull #5 START 5:30 END 6:05
	20		(cont)		(cont)	(cont)

PROJECT Gallipolis Lock & Dam **HOLE NO.** R-49/2

PROJECT				INSTALLATION		SHEET **2**
GALLIPOLIS LOCK & DAM				ORH-CD		OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS (cont)		Box 6	Pull #5
475.7	21					TIME 35 min
			CLS			DRL 35 min
	22		S.- m.h, m.-dk.gr., shy			RAN 4.8
	23		slk. ang. ptg @ 22.0		22.8	REC 6.2
						LOSS Ø
	24		ha, slk. JT @ 23.7-24.2			UNACC. Ø T/DED 23.2
						DEP 23.5
	25		shy 23.3 - 29.5		Box 7	Pull #6
						START 6:35
	26		grading			END 7:00
					26.5	TIME 25 min
469.7	27					DRL 25 min
						RAN 5.2
	28		ICL		Box 8	REC 5.4
						LOSS Ø
	29		R.br, S.-m.h. slk			UNACC Ø
						DEP 28.7 T/DEP 28.6
	30		0.5 CORE LEFT IN		30.2	Pull #7
	31		HOLE 36.7- 39.7			START 7:29
						END 8:00
	32				Box 9	TIME 31 min
						DRL 31 min
	33					RAN 5.2
						RUN 5.2
	34				33.8	LOSS Ø
						UNACC Ø
	35					DEP 33.9 T/DEP 33.8
					Box 10	Pull #8
	36					START 8:20
460.0			Bottom Hole		36.7	END 8:40
	37					TIME 20 min
						DRL 20 min T/DEP 36.9
	38					RAN 5.8
						REC 2.6
	39					LOSS 0.5
						UNACC 0.5
	40					DEP 39.7
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono R-50 STA

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-50/1

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.3

8. DEPTH DRILLED INTO ROCK 37.6

9. TOTAL DEPTH OF HOLE 459.7

10. SIZE AND TYPE OF BIT 4 V 5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/20/89 COMPLETED 1/23/89

17. ELEVATION TOP OF HOLE 497.3

18. TOTAL CORE RECOVERY FOR BORING 37.6

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
497.3	1		SANDSTONE			Pull #1
	2		m. gr, m.h., ni.gr bkn into small pieces w/occ. gr cl fld.		1	START 22:55
						END 23:10
						TIME 15 min
						DRL 15 min
494.2	3					RAN 4.7
	4		CLS Sly, S.-m.h., m.-dk gr			REC 3.3
	5					LOSS 1.4
				4.7		UNACC 1.4 DEP 4.7
491.6						Pull #2
	6		SLS		2	START 8:00
						END 8:15
	7		S.-m.h, m.-dk gr, pt Sly m. spaced hor ptgs s. 20 w/0.1 L.C @ 10.0-10.1			TIME 15 min LOSS @
	8			8.0		DRL 15 min UNACC @
						RAN 2.8
	9					REC 2.8 DEP 7.5
487.2	10				3	Pull #3 START 8:27
	11		SANDSTONE			END 8:38
	12		Sly. fig, m.h., m. gr m. spaced ptgs to 15.0 (mech) BKN (mech) 15.0-19.0	11.6		TIME 11 min DRL 11 min RAN 5.0 REC 4.9 LOSS 0.1 UNACC 0.1
	13				4	DEP 12.5 Pull #4
	14					START 8:48
	15			15.0		END 9:10
	16					TIME 22 min DRL 22 min RAN 8.0 REC 8.0
	17				5	LOSS @
	18					UNACC @
478.3	19			18.7	6 (cont)	
	20		CLS (cont)			(cont)

ELEVATION TOP OF HOLE 497.3					**Hole No.** R-50/1	
PROJECT GALLIPOLIS LOCK & DAM			**INSTALLATION** OHH-CD		**SHEET** 2 OF 2 SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLs			Pull #4 DEP 20.5
	21		S: m.h, mid k.gr.shy		6	Pull #5
	22		½ S. sc. @ 17.6: ch.shy			START 9:20
	23		spaced shy ptys w/		22.3	END 9:57 TIME 37min DRL 37min
	24		occ tz.gr.cl. coarse		7	RAN 9.8 REC 9.8
	25		17.6-25.0 shy 25.0-26.0			LOSS Ø UNACC Ø
	26		grading		26.0	
470.3	27		ICL			
	28		motted - v.br. bkn		8	Pull #6 START 10:15 END 10:30
	29		slk s.m.h			TIME 15min DRL 15min
	30				29.8	RAN 1.7
	31					DCD 30.3 REC 1.7 LOSS Ø
	32				9	UNACC Ø
	33				33.2	DRL 32.0 Pull #7 START 10:43
	34					END 11:11 TIME 28min DRL 28min
	35					RAN 28min
	36				10	REC 50 LOSS .6
	37					UNACC .6
459.7			Bottom Hole		37.6	DEP 37.6
	38					
	39					
	90					
	41					
	42					
	93					
	44					

ENG FORM 1836-A JUN 67	(ER 1110-1-1801)	GPO 1990 OF-629-603	**PROJECT** GALLIPOLIS Lock & Dam	**HOLE NO.** R-50/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam	10. SIZE AND TYPE OF BIT 4 X 5.5"
2. LOCATION (Coordinates or Station) MONO R-50 STA 3190B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W.G. Jaques	12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

4. HOLE NO. (As shown on drawing title and file number) R-50/2	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED n/A	UNDISTURBED n/A

5. NAME OF DRILLER Dowell Norris	14. TOTAL NUMBER CORE BOXES 11
6. DIRECTION OF HOLE ☑VERTICAL ☐INCLINED ___ DEG. FROM VERT.	15. ELEVATION GROUND WATER NA

	16. DATE HOLE	STARTED 1/23/89	COMPLETED 1/29/89
7. THICKNESS OF OVERBURDEN ∅ 496.9	17. ELEVATION TOP OF HOLE 496.9		
8. DEPTH DRILLED INTO ROCK 38.4	18. TOTAL CORE RECOVERY FOR BORING 38.4		
9. TOTAL DEPTH OF HOLE 458.5	19. SIGNATURE OF INSPECTOR JMN		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE			Pull #1
	1				Box 1	START 9:45
			m.-cg., m.h., m.gr			END 10:00
	2					TIME 15min
						DRL 15min
493.7	3					RAN 4.7
			ICL			REC 4.7
	4		mottled r.br, s-m.h 0.2		3.8	LOSS ∅
			gr cl. 3.2-3.4 BKN (mech)			UNACC ∅ T/DEP 4.4
491.8	5		4.7-5.1		Box 2	DEP 4.7
			CLS			Pull #2
	6					START 10:20
			s-m.h, m-dk.gr			END 10:35
	7				7.3	TIME 15min
			grading s.Ly @ 6.0			DRL 15min
	8				Box 3	RAN 4.9
						REC 4.6
487.6	9					LOSS ∅
						UNACC ∅ T/DEP 9.0
	10		SANDSTONE		10.8	DEP 9.6
						Pull #3
	11		s.Ly F.g., m.h., m			START 10:45
			gr			END 11:00
	12				Box 4	TIME 15min
						DRL 15min UNACC ∅
	13					RAN 5.1
						REC 4.9
	14				14.2	LOSS ∅
481.8	15					DEP 14.0
479.8			CLS		Box 5	Pull #4 T/DEP 14.7
			S:m-DK.gr			START 23:10
	16		SLS			END 23:30
			sa, s.-m.h., m-DK.gr			TIME 20min
	17		Ang. cl coa RL9 17.1-			DRL 20min
			17.3			RAN 5.4
478.7	18				18.2	REC 5.4
			CLS		Box 6	LOSS ∅
	19		s-m.h., m. dk.gr bKn			UNACC ∅
477.0	20		SLS Len 18.6-19.2 w/0.3Lc mech grading		(cont)	DEP/T/DEP 19.9

| | | | | | | SHEET 2 OF 2 SHEETS |

PROJECT: Gallipolis Lock + Dam
INSTALLATION: ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		Box 6	Pull #5
476.1			S: m.h, m.-dk.gr grading			
	21		CLS			START 7:26
			S. m.h., m. dk.gr.		21.7	END 7:52
	22		occ sky, sky bkn 21.3-21.1			TIME 26 min
			w/tr cl. coa @ 21.3:5s			DRL 26 min
	23		Len 29.3-29.8 w/gr		Box 7	RAN —
			cl. coa contact @			REC 5.0
	24		24.3			LOSS Ø T/DEP 29.1
472.0						UNACC Ø
	25		ICL		25.4	DCD 29.9 / Pull #6
	26					START 8:00
			mottled - r.br. s.-m.h		Box 8	END 8:40
	27					TIME 40 min
			ve. bkn. 29.9 -26.2			DRL 40 min
	28					RAN —
			1" ve. s. cl. se. @ 27.5			REC 5.0
	29					LOSS Ø
			Becoming r.br @ 29.4		29.3	UNACC O T/DEP 29.1
	30				Box 9	DEP 29.9 / Pull #7
	31					START 8:49
						END 9:30
	32					TIME 41 min
					32.3	DRL 41 min
	33					RAN —
					Box 10	REC 5.0
	34					LOSS Ø
						UNACC Ø
	35					DEP+T/DEP 34.9 / Pull #8
					35.8	START 9:40
	36					END 10:00
					Box 11	TIME 20 min
	37					DRL 20 min
						RAN —
	38					REC 3.5
458.5			Bottom Hole		38.4	LOSS Ø
	39					UNACC Ø
						DED+T/DEP 38.4
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam
2. LOCATION (Coordinates or Station) Mono R-51 STA
3. DRILLING AGENCY W.G. JAQUES
4. HOLE NO. (As shown on drawing title and file number) R-5111
5. NAME OF DRILLER DAVID HARPER
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN Ø 497.4
8. DEPTH DRILLED INTO ROCK 38.8
9. TOTAL DEPTH OF HOLE 458.6

10. SIZE AND TYPE OF BIT 4 x 5½"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A — UNDISTURBED N/A
14. TOTAL NUMBER CORE BOXES 10
15. ELEVATION GROUND WATER N/A
16. DATE HOLE STARTED 1/23/89 — COMPLETED 1/23/89
17. ELEVATION TOP OF HOLE 497.4
18. TOTAL CORE RECOVERY FOR BORING 38.8
19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
497.4	1, 2, 3		SANDSTONE m.c.g, m.h, m.gr UE. bkn 0.0-1.4 (mech) gr cl coa, ptgs @ 2.4, 2.7, 3.1 f 3.4	35	Box 1	Pull #1 START 12:00 REC 1.4 END 1220 Loss Ø DEP 1.4 TIME 20 UNACC Ø DEL 20 RAN 1.4 Pull #2
493.9						
	4, 5, 6		CLS s. m. dk. gr O.7 L.C. 3.5-4.2 (s.-mech)	35	Box 2	START 12:25 REC 4.5 END 12:33 LOSS 0.7 TIME 8min UNACC 0.7 DEL 8min RAN 5.2
490.8						DEP 6.6
	7, 8, 9, 10		SLS Interbdd w/m-dk.gr. Shy CLS. w/occ gr.cl coa shy ptgs CLS 9.3-10.3	76	Box 3	Pull #3 START 12:45 UNACC Ø END 12:57 TIME 12min DEL 7min RAN 5.0 REC 5.0 LOSS Ø
487.1				11.2		DEP 11.6
	11, 12, 13, 14, 15		SANDSTONE f.g., m.h, m.gr, cly shy bkn 11.2-12.0 C (Loss mech)	14.7	Box 4	Pull #4 START 1:05 END 1:34 TIME 29min DEL 29min RAN 8.9 REC 8.9 LOSS Ø UNACC Ø
481.2	16				Box 5	
	17, 18, 19, 20		CLS s. -m.h., m. -dk.gr, shy, 0.2 s. bkn BO w/gr.cl 16.2 - thin f.g. ss lam f 20 starting at 17.0 s. dk gr crushed BO w/.- (CONT)	18.4	Box 6 (CONT)	(CONT)

PROJECT Gallipolis Lock f Dam — HOLE NO. R-5111

PROJECT Gallipolis Lock + Dam				**INSTALLATION** ORH-CD			**SHEET** 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS			Pull #7
476.3	21		Sh. Frag & gr Cl. 19.9-20.5		Box 6	DEP 20.6
						Pull #5
	22		CLS		21.5	START 1:45
			Shy -dk.gr. S-m.h.			END 2:09
	23		w/ closely spaced, h.r		Box 7	Time 24 min
			Cl. coa. ptgs. (mostly			DRL 24 min
	24		0.1 pieces ue bkn			RAN 4.9
			24.3-25.1 (mech)			REC 4.9
	25					Loss 0
472.0					25.4	UNACC 0
	26		ICL			DEP 25.9
						Pull #6
	27		Mottled-R.br. S-m.h		Box 8	START 2:20
						END 2:38
	28		SLK S. 25.4-28.0			Time 18 min
						DRL 18 min
	29		0.3 Lc. btwn 30.1 & 34.5			RAN 4.7
						REC 4.7
	30		1.5 Lc. btwn 34.5 & 38.8			Loss 0
					30.1	UNACC 0
	31					DEP 30.1
					Box 9	Pull #7
	32					START 2:50
						END 3:10
	33					Time 20 min
						DRL 20 min UNACC 0.4
	34					RAN 4.4
					34.0	REC 4
	35					Loss 0.4
						DEP 34.5
	36				Box 10	Pull #8
						START 15:45
	37					END 16:02
						Time 17 min Loss 0
	38					DRL 17 min UNACC 0
458.6			Bottom Hole			RAN 4.3
	39				38.8	REC 4.3
	40					DEP 38.8
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67

GPO 1965 OF—325-242

PROJECT Gallipolis Lock+Dam   HOLE NO. R-511

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4 X 5.5"
2. LOCATION (Coordinates or Station) MONO R-51 STA 3+80 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-51/2	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE	14. TOTAL NUMBER CORE BOXES 11
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A

		16. DATE HOLE	STARTED 1/24/89	COMPLETED 1/24/89
7. THICKNESS OF OVERBURDEN Ø 497.4		17. ELEVATION TOP OF HOLE 497.4
8. DEPTH DRILLED INTO ROCK 37.9		18. TOTAL CORE RECOVERY FOR BORING 37.9
9. TOTAL DEPTH OF HOLE 459.5		19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.4			SANDSTONE			Pull #1
	1					START 10:50
			m.-cg., m.h., m.gr.		Box 1	END 10:58
	2					TIME 8 min
			Thin bdd to 1.5			DRL 8 min
	3					RAN —
					3.5	REC 4.7
	4					LOSS 0
492.7						UNACC 0
					Box 2	DEP 4.9 T/DEP 4.7
	5		CLS/ICL			Pull #2
	6		m.-dk.gr.-R.br, s-			START 11:00
						END 11:10
	7		m.h., SLK O.I S.gr.cl.		7.1	TIME 10 min
						DRL 10 min
	8		4.7-4.8 m. spaced slk			RAN —
						REC 5.2
	9		PTgs. occ shy grading		Box 3	LOSS 0
						UNACC 0
	10		more shy w/depth			DEP 9.9
					10.7	Pull #3
	11		bkn 15.0-15.6 w/s.gr			START 11:14
					Box 4	END 11:25
	12		cl. coa. @ 15.6			TIME 11 min
						DRL 11 min
	13					RAN —
						REC 3.5
						LOSS 0
						UNACC 0
					12.4	DEP 13.9
	14					Pull #4
	15				Box 5	START 11:30
481.8						END 11:40
	16		SANDSTONE			TIME 10 min
			shy, fig., m.h, m.gr.			DRL 10 min
	17				17.1	RAN —
			VE. shy 15.6-16.0			REC 5.0
	18				Box 6	LOSS 0
478.6						UNACC 0
						DEP 18.5 T/DEP 18.4
	19		CLS-shy			Pull #5
			shi, shy, s-m.h., m-dk			START 12:15
	20		gr. (cont)		(cont)	(cont)

ELEVATION TOP OF HOLE	497.4	Hole No. R-51/2

PROJECT	INSTALLATION	SHEET 2
GALLIPOLIS LOCK ! DAM.	ORH-CD	OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV-ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	20		CLS-SLY		Box 6	Pull#5
						END 12:22
	21		Ang., SLK. PTg. 20.1-20.3		21.0	TIME 7min UNACC 0
			Less sly w/depth			DRL 7min
	22		mottled Icl zo 22.0-			RAN —
			22.8 SLy zo 23.5-24.3		Box 7	REC 3.8 T/DEP 22.2
	23		TRANS 24.3-25.5			Loss 0
						DEP 23.5
	24					Pull#6 START 1230
					24.3	END 12:45
						T/DEP 24.3 TIME 15min
	25					DRL 15min
						DEP 24.9 RAN —
471.9						REC 2.1
						Loss 0
	26		ICL		Box 8	UNACC 0
	27		mottled R.br, s-m.h,			Pull#7
						START 1:00
	28		SLK S.-25.8-27.0		28.1	END 120 REC 5.2
						TIME 20min Loss 0
	29		UE. bkn 27.0-29.5			DRL 20min UNACC 0
						RAN —
	30		R.br STARTing @ 29.5		Box 9	DEP 29.6 T/DEP 29.5
						Pull#8
	31					START 1:27
						END 1:50
					31.5	TIME 23min
	32					DRL 28min
						RAN —
	33					REC 3.1 T/DEP 32.6
					10	Loss 0
	34					UNACC 0
	35				35.1	DEP 34.9
						Pull#9
	36					START 2:05
						END 2.30
					11	TIME 25min
	37					DRL 25min
						RAN —
						REC 5.3
						Loss 0
459.5	38		Bottom Hole		37.9	UNACC 0
						DEP 38.0 T/DEP 37.9
	39					
	40					
	41					
	42					
	43					
	44					

PROJECT	HOLE NO.
GALLIPOLIS LOCK+DAM	R-51/2

1. PROJECT GALLIPOLIS LOCK & DAM	**10. SIZE AND TYPE OF BIT** 4 x 5½"
2. LOCATION (Coordinates or Station) MONO R-52 STA 3+38B	**11. DATUM FOR ELEVATION SHOWN (TBM or MSL)** M.S.L.
3. DRILLING AGENCY W. G. JAQUES	**12. MANUFACTURER'S DESIGNATION OF DRILL** B-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) R-52/1	**13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN** DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRY	**14. TOTAL NUMBER CORE BOXES** 10
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	**15. ELEVATION GROUND WATER** N/A
	16. DATE HOLE STARTED 1/23/89 COMPLETED 1/23/89
7. THICKNESS OF OVERBURDEN Ø 497.0	**17. ELEVATION TOP OF HOLE** 497.0
8. DEPTH DRILLED INTO ROCK 38.3	**18. TOTAL CORE RECOVERY FOR BORING** 38.3 %
9. TOTAL DEPTH OF HOLE 458.7	**19. SIGNATURE OF INSPECTOR** JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE			PULL #1
	1		m.c.g., m.h., m.ge.			START 4:27
						END 4:45
	2				1	TIME 18 min LOSS 1.1
494.2						DRL 18 min UNACC 1.1
	3		CLS			RAN 3.7
	4		M dk.gr. s-m-h			REC 2.9
			L/LC 2.8-3.9 (mech.s			DEP 3.7
	5		MAT) S. 6.0-7.3; BKN	4.7		T/DEP 3.0
			7.3-7.6			PULL #2
	6					START 5:03
	7				2	END 5:15
						TIME 12 min
488.9	8					DRL 12 min
			SLS		8.4	RAN 5.0
	9		SA, m.-dk.gr. s-m-h			REC 4.7
487.6						LOSS Ø UNACC Ø
	10		CLS			DEP/T/DEP 8.7
			M.-dk.gr, s-mh.			PULL #3
	11		bkn. R.br. slk. Ich			START 5:29
			Zo 10.9-12.1 BKN w/slk		3	END 5:34
	12		13.2-13.7; 0.1 s.gr cl			TIME 5 min
			13.7-13.8 : Becoming		12.1	DRL 5 min
	13		shy below EL 483.4			RAN 7.0
	14					REC 4.9
					4	LOSS Ø
	15					UNACC Ø T/DEP 13.6
					15.5	
481.0	16					DEP 15.7
			SANDSTONE			PULL #4
	17		shy., fig., m.h., m.gr			START 5:33
			Q2 CLS LCN 17.0-17.2		5	END 6:34
479.1	18					TIME 61 min
			CLS			DRL 61 min
	19		shy., s-m.h., m.dk.gr		19.1 (cont)	RAN 7.4
	20		(cont)			(cont)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT GALLIPOLIS LOCK & DAM	HOLE NO. R-52/1

ELEVATION TOP OF HOLE				4970		Hole No. P-52/1

PROJECT: GALLipolis LockEDAm
INSTALLATION: ORH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					PuLL#4
	21		CLS.			REC 8.9
			CLosELy spAcEd CmAy		6	
	22		0.6) hor pTgs, w/occ			LOSS 0.1
			TR. gR. cL. coR 0.2 VE			UNACC 0.1
	23		s. gR. cL @ 20.5-20.7		22.6	T/DEP 22.6
			BKN 20.7-21.5 W/0.1			DEP 23.1
	24		L.C. BKN mech			PuLL#5
472.2			22.3-22.6			
	25		gRAding		7	START 6:55
			ICL			END 7:19
	26					TIME 24min
			mottEN-L. DR, s. mA		26.3	DRL 24min
	27					RAN 7.6
			SLK 5. 25.3-30.9 W/0.1			REC 8.2
	28					LOSS 0.1
			LC bTwN 30.0,&30.9		8	UNACC 0.1
	29					
			0.3 LC bTwN 30.9 &			
	30		38.3		30.0	
	31					DEP 30.7
						T/DEP 30.9
	32				9	PuLL#6
	33					START 7:42
						END 8:20
	34				33.7	TIME 28min
						DRL 28min
	35					RAN 7.8
	36					RUN 7.1
						LOSS 0.3
	37				10	UNACC 0.3
458.7	38		Bottom HoLE		38.3	DEP 38.5 T/DEP 38.3
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO: 1949 OF—320-263

PROJECT: GALLipolis LockEDAm
HOLE NO.: P-52/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO R-52 STA 3+06 B

3. DRILLING AGENCY W. & Jaques

4. HOLE NO. (As shown on drawing title and file number) R-52/2

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 497.1

8. DEPTH DRILLED INTO ROCK 38.1

9. TOTAL DEPTH OF HOLE 459.0

10. SIZE AND TYPE OF BIT 4 x 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/24/89 COMPLETED 1/24/89

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 38.1

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SANDSTONE m.-cg, m.h., m.gr bkn. w/0.7 L.L 0.0-2.7		Box 1	Pull #1 START 5:20 END 6:50 TIME 90min LOSS 0.7 DRL 20min UNACC 0.7 RAN 3.4 REC 2.7 DEP & T/DEP 2.7
	1					
	2					
	3					
	4				4.3	Pull #2 START 7:00 END 7:10 TIME 10 min DRL 10 min RAN 4.8 REC 4.8 LOSS ∅
492.1	5		CLS S.-m.h., m-dk.gr VE.S. SE. 6.4-6.5		Box 2	
490.6	6					UNACC ∅
	7		SLS S-m.h, m.-dk.gr		2.8	T/DEP 7.2 DEP 7.7
	8		GRADING			Pull #3 START 7:15 END 7:26
	9				Box 3	TIME 11min DRL 11min UNACC 0.7
487.5	10		CLS S.-M.H, m-dk.gr, Shy w/gr.ch.cao 1fld.p tgs VE BKN. 10.0-12.0 w/0.7 L.C. VE bkn w/gr fld. ξSE 16.2-16.8			RAN 4.5 REC 3.8 LOSS 0.7
	11					
	12				12.0	DEP 12.1 T/DEP 12.0
	13				Box 4	Pull #4 START 7:42 END 8:02
	14					TIME 20min DRL 20min
	15				15.6	RAN 7.0 REC 7.0
	16				Box 5	LOSS ∅ UNACC ∅
480.3	17		SLS SLi, SA, S-m.h., m-dk. gr. grading			
	18					
478.1	19				19.0 Box 6	T/DEP 19.0
	20		SLS ch.y., S-m.h, m-dk.gr (cont)		(cont)	(cont)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam   HOLE NO. R-52/2

| | | | | | | SHEET 2 OF 2 SHEETS |

| PROJECT GALLIPOLIS Lock & DAM | | | | INSTALLATION ORH-CD | | |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS (CONT)		Box 6	DEP 20.4
476.3			gRAding			
	21		CLS			Pull #5
						START 8:45
	22		Shy, s-m.h., m.dk.gR.			END 9:15
						Time 30 min
	23		CLosLy spAced PTgs	22.7		DRL 30 min
						RAN 9.2
	24		w/gR cL cos & SE.			REC 8.7
					Box 7	Loss 0.5
	25		2.5 L.C btwn 21.8 & 28.2			UNACC 0.5
	26					
	27					
468.9	28					T/DEP 28.2
	29		ICL		29.0	
			R.bR, s-m.h, bkn. w/slk		Box 8	DEP 30.1
	30					Pull #6
			0.5 LC btwn 28.2 & 35.3			START 9:36
	31					END 10:05
			0.1 LC btwn 35.3 & 38.1			Time 29 min
	32					DRL 29 min
	33			32.8		RAN 7.1
						REC 6.6
	34				Box 9	Loss 0.5
	35					UNACC 0.5
						T/DEP 35.3
	36					DEP 35.6
				36.8		Pull #7
	37				Box 10	START 22:55
						END 23:12
459.0	38		BOTTOM HOLE		38.1	Time 17 min
						DRL 17 min
	39					RAN 3.0
	40					REC 2.9
						Loss 0.1
	41					UNACC 0.1
						DEP 39.1
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1900 OF-629-803   PROJECT GALLIPOLIS Lock & DAM   HOLE NO. R-52/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET / OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono R-53 STA 2+96 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-53/1

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN θ 497.4

8. DEPTH DRILLED INTO ROCK 37.8

9. TOTAL DEPTH OF HOLE 459.6

10. SIZE AND TYPE OF BIT 4 √5 R"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN / **DISTURBED** N/A / **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER NA

16. DATE HOLE STARTED 1/23/89 COMPLETED 1/24/89

17. ELEVATION TOP OF HOLE 497.4

18. TOTAL CORE RECOVERY FOR BORING 37.8

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.4			SANDSTONE			Pull #1
	1		m.-c.g., m.h, m.gr		Box 1	START 9:05
			bkn. into sm. pieces			END 9:13
	2		(max 0.4) 0.0-3.6			TIME 8 min
						DRL 8 min
	3					RAN 5.0
					3.6	REC 5.0
	4					LOSS Ø
492.8						UNACC Ø
	5		CLS		Box 2	DEPT/DEP 5.0
			m.-dk. gr, s.-m.h.,			Pull #2
	6		occ. SLK ve.s. 4.6-			START 9:24
			5.5; BKN. w/s zon			END 9:36
	7		5.3 -9.8 w/o. + L.C.		7.3	TIME 12 min
			grading			DRL 12 min
	8					RAN 4.8
						REC 4.4
	9				Box 3	LOSS 0.4
						UNACC 0.4
	10					DEP+T/DEP 9.8
						Pull #3
486.9	11				11.3	START 9:50
			ICL			END 10:20
	12		P.br, s.-m.h., SLK ve.			TIME 30 min
484.8			bkn 11.6 - 12.6		Box 4	DRL 30 min
	13		CLS/SLS			RAN 8.4
			Interbdd, s.-m.h.,			REC 7.4
	14		m.-dk. gr. occ.shy.;			LOSS —
			occ. gr. cl. coa & fld			UNACC —
	15		ptg; btwn. differ		14.9	
			materials; BKN			
	16		(mech) 16.9 -17.2		Box 5	
480.2	17					T/DEP
			SANDSTONE			
	18		Shy - f.g., m.h., m.gr			DEP 18.2
478.4			grading		18.5	Pull #4
	19				Box 6	START 10:43
			CLS			END 11:03
	20		(cont)		(cont)	(cont)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock+Dam

HOLE NO. R-53/1

						SHEET 2 OF 2 SHEETS

PROJECT: Gallipolis Lock & Dam
INSTALLATION: ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	Pull #4
	21		occ. shy., m. dk., gr.,			Time 20 min
	22		s. - m.h., pts shy			DRL 20 min
			gr. cl coa, hor. ptg.		22.2	RAN 7.2
	23		@ 19.4, 20.9; Becoming			REC 8.1
			shy @ 20.3, 0.1 S.gr.cl		Box 7	LOSS 0
	24		SE @ 24.0 S. (overdrilled)			UNACC 0
			24.7 - 25.3			
	25		grading			
471.5	26				25.6	DEP 25.3 T/DEP 25.1
			ICL		Box 8	Pull #5
	27					START 23:15
	28		Motted - R.br, S-m.h			END 23:33
			SLK			Time 18 min
	29				29.2	DRL 18 min
	30				Box 9	RAN 5.9
						REC 5.9
	31					LOSS 0
	32					UNACC 0
						DEP + T/DEP 31.2
	33				32.8	Pull #6
	34				Box 10	START 7:30
						END 8:00
	35					Time 30 min
	36					DRL 30 min
					36.3	RAN 6.6
	37				Box 11	REC 6.6
459.6			BOTTOM HOLE			LOSS 0
	38				37.8	UNACC 0
	39					T/DEP 37.6 DEP 37.9
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67 (ER 1110-1-1801)   GPO 1900 OF - 625-603

PROJECT: Gallipolis Lock & Dam   HOLE NO. P-5311

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono R-53 STA 2+68 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-53/2

5. NAME OF DRILLER Dave Harper

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.0

8. DEPTH DRILLED INTO ROCK 37.4

9. TOTAL DEPTH OF HOLE 459.6

10. SIZE AND TYPE OF BIT 4½" 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/25/89 | COMPLETED 1/25/89

17. ELEVATION TOP OF HOLE 497.0

18. TOTAL CORE RECOVERY FOR BORING 37.4

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE			Pull #1
	1				Box 1	START 7:20
			m-c.g., m.h., m.gr.			END 7:32
	2					TIME 12 min
			Thin bdd. to 1.2			DRL 12 min
	3					RAN —
			Ang (70°) s.gr.cl. fld		3.7	REC 4.3
	4					LOSS Ø
			Contact			UNACC Ø T/DEP 4.3
	5				Box 2	DEP 5.0
						Pull #2
	6					START 7:40
						END 7:51
	7					TIME 11 min
489.6					7.3	DRL 11 min
	8		SLS			RAN —
			Chy, s.-m.h., m.-dk.gr			REC 3.8 T/DEP 8.1
	9		Ha.-vert, hld, irr frac		Box 3	LOSS Ø
			8.5-9.4: ss lens. 9.5-10.0			UNACC Ø
	10		grading			DEP 9.4
486.6						Pull #3
	11		CLS		11.1	START 8:00
			m-dk.gr., s-m.h., shy			END 8:31
	12		w/tr.-lens of s.gr.cl			TIME 31 min
			uebkn 11.1-14.9 w/huy.			DRL 31 min
	13		gr cl. coa @ 0.9 L C:		Box 4	RAN —
			SLS lens 13.2-13.9:			REC 7.9
	14		huy.gr.cl. coa ptgs			LOSS 6.9
			@ 16.1, 16.3 +16.8			UNACC 6.9
	15				14.9	
	16					
480.1					Box 5	DEP+T/DEP 16.9
	17					Pull #4
			SLS			
	18		sa, m.h, m-dk.gr			START 9:00
			45° slk ptg @ 18.1-18.5			END 9:35
	19		grading into		19.0	TIME 35 min
477.5					Box 6	
	20		CLS (cont)		cont	(cont)

PROJECT Gallipolis Lock & Dam | HOLE NO. R-53/2

| PROJECT *GALLIPOLIS LOCK & DAM* | | | | | INSTALLATION *ORH-CD* | | SHEET *2* OF *2* SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		*CLs*		Box 6	*Pull # 4*
	21		S.-m.h., m.-dk.gr., shy			DRL 35 min
						RAN —
	22		w/occ. TR. of gr. cl. coa.			REC 9.2
					22.7	LOSS Ø
	23		HOR pTg. SLy 23.5-26.1			UNACC Ø
	24		TRAN. 26.1-28.3 w/occ.		Box 7	
	25		SLK, IRR pTg.			
	26					
					26.1	
	27					T/DEP 26.7 DEP 26.9
					Box 8	*Pull #5*
468.7	28					
	29		*ICL*			START 9:53
						END 10:18
	30		R.br. 5-m.h, bkn,			TIME 25 min
			SLK 3.1 L.C btwn		29.8	DRL 25 min
	31		30.3 & 37.4			RAN — T/DEP 30.3
						REC 4.2
	32				Box 9	LOSS Ø
	33					UNACC Ø
						DEP 32.7
	34				33.5	*Pull #6*
						START 10:27
	35				Box 10	END 11:18
						TIME 51 min
	36					DRL 51 min UNACC 3.1
						RAN —
	37					REC 4.0
459.6			BOTTOM HOLE		37.4	LOSS 3.1
	38					DEP & T/DEP 37.4
	39					
	40					
	41					
	42					
	43					
	44					

| ENG FORM 1836-A JUN 67 | (ER 1110-1-1801) | GPO 1900 OF - 628-803 | PROJECT *GALLIPOLIS Lock & Dam* | HOLE NO. *R-53/2* |

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam	10. SIZE AND TYPE OF BIT 4 y 5½"
2. LOCATION (Coordinates or Station) mono R-54 sta 2+58 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W.G. Jaques	12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 Mobile
4. HOLE NO. (As shown on drawing title and file number) R-54/1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER DAVE HARPER	14. TOTAL NUMBER CORE BOXES 10
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE — STARTED 12/24/89 — COMPLETED 12/24/89
7. THICKNESS OF OVERBURDEN Ø 497.0	17. ELEVATION TOP OF HOLE 497.0
8. DEPTH DRILLED INTO ROCK 37.1	18. TOTAL CORE RECOVERY FOR BORING 37.1 %
9. TOTAL DEPTH OF HOLE 459.9	19. SIGNATURE OF INSPECTOR JMN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE m.c.g., m.h., m.g bkn into sm. pieces 0.0-2.0		1 / 3.7	Pull #1 START 8:21 END 8:31 TIME 10 min DRL 10 min RAN — REC 4.9 LOSS Ø UNACC Ø
492.1	5		ICL R.br, s.-m.br, slk s. zo w/gr.cl Ø 4.9-0.8 L.C. btwn 49:0.9		2 / 7.1	DEP 5.0 T/DEP 4.9 Pull #2 START 9:01 END 9:20 TIME 19 min DRL 19 min RAN — REC 4.1 LOSS Ø UNACC Ø
486.0	11		CLS/SLS Interbdd, m-dk.gr., s.-m.h. cls zo. ve.s.		3 / 11.5	DEP + T/DEP 8.8 Pull #3 START 9:01 END 9:20 TIME 19 min DRL 19 min RAN — REC 4.1 LOSS Ø UNACC Ø
481.4	15		SANDSTONE sly, f.g., m.h., m.gr grading		4 / 15.1	DEP + T/DEP 13.0 Pull #4 START 9:34 END 9:56 TIME 32 min DRL 32 min RAN — REC 3.8 LOSS Ø UNACC Ø
478.9	18		CLS s.-m.h., m.-dk.gr., sly sly 18.7-19.4 (cont)		5 / 18.7 6 (cont)	DEP + T/DEP 16.8 Pull #5 START 10:08 END 10:30 TIME 22 min DRL 22 min (CONT)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock + Dam	HOLE NO. R-54/1

PROJECT: *Gallipolis Lock & Dam.*
INSTALLATION: *ORH-CD*
SHEET *2* OF *2* SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		*CLs*			*Pull #5*
	21		*Closely spaced (max .0.4) shy ptgs. w/occ. gr. cl. coa. starting @ 20.1: 0.3 L.C btwn 20.1 & 24.6*		6	*RAN —*
	22					*REC 7.5*
						LOSS 0.3
	23				22.3	*UNACC 0.3*
	24					
472.4					7	*DEP + T/DEP 24.6*
	25		*ICL*			*Pull #6*
	26		*Mottled - r. br. s-m.h.*		25.9	*START 10:49*
	27		*SLK. bkn 25.0 - 25.9*			*END 11:15*
						TIME 26 min
	28		*S. 25.9 - 27.6 w/bkn*		8	*DRL 26 min*
						RAN —
	29		*zo. 21.8 - 22.6*			*REC 8.3*
	30					*LOSS ⊘*
					29.7	*UNACC ⊘*
	31					
	32				9	
	33					*DEP + T/DEP 32.9*
					33.2	*Pull #7*
	34					*START 12:20*
						END 12:40
	35					*TIME 20 min*
						DRL 20 min
	36				10	*RAN —*
						REC 4.4
459.9	37		*Bottom Hole*			*LOSS ⊘*
					37.1	*UNACC ⊘*
	38					*DEP + T/DEP 37.3*
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A   (ER 1110-1-1801)   GPO 1900 OF - 628 - 603
JUN 67

PROJECT: *Gallipolis Lock & Dam*   HOLE NO. *R-54/1*

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS Lock & DAM	10. SIZE AND TYPE OF BIT 4X5½"
2. LOCATION (Coordinates or Station) MONO R-54 STA 2+30B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE
4. HOLE NO. (As shown on drawing title and file number) R-54/2	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRY	14. TOTAL NUMBER CORE BOXES 11
6. DIRECTION OF HOLE ☒VERTICAL ☐INCLINED ___ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE — STARTED 1/24/89 — COMPLETED 1/24/89
7. THICKNESS OF OVERBURDEN @ 497.0	17. ELEVATION TOP OF HOLE 497.0
8. DEPTH DRILLED INTO ROCK 39.6	18. TOTAL CORE RECOVERY FOR BORING 39.6
9. TOTAL DEPTH OF HOLE 457.4	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE		Box 1	PULL #1
	1		m.-cg. m.h., m.gr, Thin			START 8:05
						END 8:15
			bdd 0.0-1.2			TIME 10 min
	2					DRL 10 min
						RAN 4.9
	3					REC 4.9
						Loss 0
	4				3.7	UNACC 0 T/DEP 4.0
492.5						
	5		CLS			DEP 4.9
			m.-dk.gr, s-m.h.,			PULL #2
	6		occ SLK, occ SLy		Box 2	START 8:25
			VE.S. 5.1-6.1: 95° SLK			END 8:40
	7		pTg @ 9.7-10.0; grading			TIME 15 min
			SLy with depth; cl fld			DRL 15 min
	8		pTgs @ 12.6 & 12.8		8.4	RAN —
						REC 5.0
	9					Loss 0
					Box 3	UNACC 0
	10					DEP+T/DEP 10.0
						PULL #3
	11					START 8:45
						END 9:05
	12				11.7	TIME 20 min
						DRL 20 min
484.2						RAN —
	13		SLS/CLS		Box 4	REC 4.2
						Loss 0 T/DEP 13.7
	14		m.-dk.gr, s.-m.h, pT.			UNACC 0
	15		SLy: gr,cl,coa, pTgs		15.3	DEP 15.0
						DRILL #4
	16		@ 17.4 & 12.5; grading			START 9:15
						END 9.25
	17		SA.		Box 5	TIME 10 min Loss 0
						DRL 10 min UNACC 0
479.1						RAN —
	18		SANDSTONE			REC 5.2
			SLy, Pog., m.h, m.gr			DEP+T/DEP 18.6
	19		SLi. Ang., SLy pTg @ 18.7 grading		19.1	PULL #5
477.1					Box 6	START 9:35
	20		SLS/CLS		CONT	END 9:55
						TIME 20 min (CONT)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   PROJECT GALLIPOLIS Lock + DAM   HOLE NO. R-54/2

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 497.0			Hole No. R-54/2		

PROJECT: GALLIPOLIS LOCK & DAM INSTALLATION: ORH-CD SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS		Box 6	DRL 20min LOSS 0
			Interbdd., m-clk.gr. s.-m.h.			RAN — UNACC 0
	21		Sly Closely spaced sly			REC 1.3
			Ptgs 22.1-23.2 w/tr.gr.			DEP+T/DEP 26.3
	22		cl. Pkd/coa bdd plns			PULL #6
						START 10:15
474.4			SLK, SLS lam @ 22.5-22.6		22.5	END 10:25
	23		CLS		Box 7	TIME 10min
			Sly. m-dk.gr, s.-m.h.			DRL 10min
	24					RAN —
			TRANS 25.4-30.0			REC 4.4
	25					LOSS 0
						UNACC 0 T/DEP 4.6
	26				26.0	DEP 25.0
						PULL #7
						START 10:27
	27					END 10:55
						TIME 10min
	28				Box 8	DRL 10min
						RAN —
	29					REC 5.1
						LOSS 0
467.0	30				29.5	UNACC 0 DEP 29.0
			ICL			T/DEP 29.7
	31					PULL #8
			R.br, s-m.h, bkn, slk			START 22:50
	32				Box 9	END 23:00
						TIME 10min
	33					DRL 10min
					33.2	RAN 4.9
	34					REC 4.9
						LOSS 0
	35				Box 10	UNACC 0
	36					DEP+T/DEP 35.7
					36.7	PULL #9
	37					START 23:15
						END 23:35
	38				Box 11	TIME 10min
						DRL 10min
	39					RAN 3.9
						REC 3.9
457.4			Bottom Hole		39.6	LOSS 0
	40					UNACC 0
	41					T/DEP + DEP 39.6
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) JUN 67 GPO 1988 OF - 628-803 PROJECT GALLIPOLIS LOCK & DAM HOLE NO. R-54/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

Left column	Right column
1. PROJECT Gallipolis Lock & Dam	**10. SIZE AND TYPE OF BIT** 4 x 5½"
2. LOCATION (Coordinates or Station) MONO R-55 STA 2+70 B	**11. DATUM FOR ELEVATION SHOWN (TBM or MSL)** M.S.L
3. DRILLING AGENCY W. G. JAQUES	**12. MANUFACTURER'S DESIGNATION OF DRILL** B-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) R-55/1	**13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN** — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER DAVE HARPER	**14. TOTAL NUMBER CORE BOXES** 10
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	**15. ELEVATION GROUND WATER** NA
	16. DATE HOLE STARTED 1/24/89 COMPLETED 1/24/89
7. THICKNESS OF OVERBURDEN 0 497.0	**17. ELEVATION TOP OF HOLE** 497.0
8. DEPTH DRILLED INTO ROCK 38.5	**18. TOTAL CORE RECOVERY FOR BORING** 38.5
9. TOTAL DEPTH OF HOLE 458.5	**19. SIGNATURE OF INSPECTOR** JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SAND STONE			Pull #1
	1		m-c.g., m.h., m.gr., vc			START 7:30
495.6					Box 1	END 7:45
	2		cls			TIME 15min
			shy, m-dk.gr., s-m.h			DRL 15min
			w/occ. gr. el coa. on ptgs			RAN —
	3					REC 4.6
493.5					3.6	LOSS 0
	4		SANDSTONE			UNACC 0
			m.g., m.h.-h., m.gr			T/DEP 9.6
	5		shy . 3.5- 9.0			DEP 5.1
					Box 2	Pull #2
	6		TRANS 6.1-6.6			START 7:50
490.9						END 8:00
	7		cls			TIME 10min
			shy, m.-dk.gr., s-m.h		7.3	DRL 10min
	8		w/ occ. gr. cl. coa. on ptgs; ve bkn 7.0-8.0			RAN —
			(prob area of 0.7			REC 5.7
	9		l.c. i bkn. 8.3-14.6 w/			LOSS 0
	10		0.8 l.c.		Box 3	UNACC 0
						T/DEP 9.6
	11				11.5	DEP 10.1
						Pull #3
						START 8:05
	12					END 8:14
						TIME 9min
	13					DRL 9min
					Box 4	RAN —
	14					REC 5.0
482.4						LOSS 0
	15		SAND STONE		15.3	UNACC 0
			shy, f.g., m.h., m.gr			DEP 15.1
	16		o/ sdk gr. par clnys			DEP 15.6
480.5			15.8 -16.9			Pull # 4
479.8	17		sls			START 8:18
			shi, sa/s. m.h., m.dkgr. g. cl. coa. contact @16.5		Box 5	END 8:25
	18		grading into			TIME 7min
			cls			DRL 7min
	19		s. m.h., m-dk.gr			RAN —
			shy closely spaced			REC 5.1
	20		(cont)		19.5	LOSS 0
					Box 6 cont	UNACC 0 T/DEP 5.7

PROJECT Gallipolis Lock & Dam	HOLE NO. R-55/1

PROJECT: GALLIPOLIS LOCK & DAM

INSTALLATION: ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	Box 20.1
	21		ptgs w/tr.gr cl.coa			Pull #5
	22		20.5 s. - 22.3 & 23.6 ZR.9			START 8:30
						END 8:45
	23					TIME 15 min
						DRL 13 min
					23.2	RAN —
	24					REC 4.7
472.6						LOSS 0
					Box 7	UNACC 0 T/DEP 24.3
	25		ICL			DEP 29.6
	26		motted - R.br, s. m.h.			Pull #6
						START 8:55
						END 9:20
	27		SLK, VE s. w/g.r.cl. 24.4		26.8	TIME 25 min
						DRL 25 min
	28		-25.8 Turning R.br @			RAN —
					Box 8	REC 4.1
	29		25.8			LOSS 0.5
						UNACC 0.5 DEP 29.1
	30		0.8 LC btwn 25.8 & 30.0			T/DEP 29.4
			0.7 LC Btwn 30.0 & 38.5			Pull #7
	31					START 9:28
					31.2	END 10:14
	32					TIME 46 min
						DRL 23 min
	33					RAN —
					Box 9	REC 4.5
	34					LOSS 0.4
						UNACC 0.4
	35				35.0	DEP + T/DEP 24.1
						Pull #8
	36					START 10:23
					Box 10	END 10:53
	37					TIME 30 min
						DRL 30 min
458.5	38		Bottom Hole			RAN —
						REC 5.6
					38.5	LOSS 0
	39					UNACC 0
	40					DEP 39.1
	41					DEP 39.6
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1960 OF - 625-603

PROJECT: GALLIPOLIS LOCK & DAM   HOLE NO. A-5511

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	Hole No. R-55/2	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4 x 5.5"

2. LOCATION (Coordinates or Station) MONO R-55 2 STA 1+85

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. G. JAGUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-55/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE

14. TOTAL NUMBER CORE BOXES 11

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/25/89 COMPLETED 1/25/89

7. THICKNESS OF OVERBURDEN Ø 477.0

17. ELEVATION TOP OF HOLE 497.0

8. DEPTH DRILLED INTO ROCK 39.1

18. TOTAL CORE RECOVERY FOR BORING 39.1 %

9. TOTAL DEPTH OF HOLE 457.9

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE			Pull #1
	1					START 7:30
			m.-c.g., m.h., m.gr			END 7:45
	2				1	TIME 15min
			Thin bdd to 1.4			DRL 15min
	3					RAN —
						REC 4.6
493.1	4			3.7		LOSS Ø
			CLS			UNACC Ø
	5		S.-m.h., m.-dk.gr shy			T/DEP 4.6
491.5						DEP 5.1
	6		SLS	2		Pull #2
			Sa., s.-m.h. m.dk.gr			START 7:50
	7			7.0		END 8:00
489.5						TIME 10min
	8		CLS			DRL 10min
						RAN —
	9		Shy. S.-m.h., m.-dk.gr		3	REC 5.2'
	10		Closely spaced Irr slk			LOSS Ø
						UNACC Ø T/DEP 9.8
	11		PTgs to 11.0 : slk ptgs	10.2		DEP 10.1
	12		@ 12.3 : 12.5 : S 14.8·15.1			Pull #3
						START 8:05
	13				4	END 8:14
						TIME 9min
	14					DRL 9min
				13.8		RAN —
						REC 5.0
481.9	15					LOSS Ø
			SANDSTONE			UNACC Ø T/DEP 14.8
480.9	16		shy fsg., m.h., m.gr grading into		5	DEP 15.1
	17		SLS			Pull #4
			SA, s.-m.h., m-dk.gr			START 8:18
			pts.shy Irr. slk. ptg	17.3		END 8:25
	18		@ 19.3 grading			TIME 7min
					6	DRL 7min
477.9	19					RAN —
						REC 5.1
	20		CLS (cont)		(cont)	LOSS Ø
						UNACC Ø T/DEP 19.7
						DEP 20

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam HOLE NO. R-55/2

				ELEVATION TOP OF HOLE 497.0			Hole No. R-55/2	

PROJECT GALLIPOLIS LOCK & DAM
INSTALLATION ORH-CD
SHEET 2 **OF** 2 **SHEETS**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		6	PULL #5
	21				20.9	START 8:30
			S-m.h, m.dk.gR, occ			END 8:45
	22					TIME 15min
			shy w/closely spaced			DRL 15min
	23				7	RAN —
			Irr slk. ptgs To 22.6			REC 4.7
	24					LOSS Ø
			; TRANS 24.6 - 25.8		24.4	UNACC Ø T/DEP 24.4
	25					DEP 25.1
471.2						PULL #6
	26		ICL		8	START 8:55
	27					END 9:20
			R.bR., s-.m.h., bkn			TIME 25min UNACC Ø.5
	28					DRL 25min
			w /slk		28.1	RAN —
	29					REC 4.1
			0.5 L.C. btwn 25.8 & 27.2			LOSS Ø.5 DEP 29.1
	30					T/DEP 29.4
			0.4 L.C. btwn 27.2 & 34.1		9	PULL #7
	31					START 9:28
						END 10:14
	32				32.1	TIME 46min
	33					DRL 28min
						RAN —
	34					REC 4.5
					10	LOSS Ø.4
	35					UNACC 0.4
						T/DEP + DEP 34.1
	36				35.9	PULL #8
						START 10:23
	37					END 10:53
					11	TIME 30min
	38					DRL 30min
						RAN —
457.9	39		Bottom Hole		39.1	REC 5.6
						LOSS Ø
	40					UNACC Ø
						T/DEP 39.1
	41					DEP 39.6
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1980 OF-625-603

PROJECT GALLIPOLIS LOCK & DAM
HOLE NO. R-55/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET / OF 2 SHEETS

1. PROJECT GALLIPOLIS Lock & DAM
2. LOCATION (Coordinates or Station) MONO R-56 STA 1+75B
3. DRILLING AGENCY W. G. JACUES
4. HOLE NO. (As shown on drawing title and file number) R-5611
5. NAME OF DRILLER STEVE FRY
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN ∅ 496.1
8. DEPTH DRILLED INTO ROCK 37.1
9. TOTAL DEPTH OF HOLE 457.0

10. SIZE AND TYPE OF BIT 4×5½"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
14. TOTAL NUMBER CORE BOXES 9
15. ELEVATION GROUND WATER N/A
16. DATE HOLE STARTED 2/2/89 COMPLETED 2/2/89
17. ELEVATION TOP OF HOLE 496.1
18. TOTAL CORE RECOVERY FOR BORING 36.5
19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.1			SAND STONE			PULL #1
	1		m-cg, m.gr, m.h, Thin bdd			START 5.33
			RECEMENTed, sh bdd. ptns		Box 1	END 5:48
494.1	2		1.5-2.0			TIME 15 min
			CLS			DRL 15 min
			S. m.h, mgr-motted, DKN			RAN —
	3		SLK S, shy contact @ 2.0. sa			REC 3.9
492.8			2.0-2.9 1.3LC btwn 2.9+5.0 VES.		3.5	LOSS 1.3
			ICL			UNACC 1.3
	4		l. br, s.-m.h, 1.3 LC.			
			btwn 3.4 & 5.0. 0.8 LC.		Box 2	DEP 95
	5		btwn 5.0 & 10.0			T/D & PS.0
						PULL #2
	6					START 6:15
						END 6:28
	7					TIME 13 min
						DRL 13 min
487.9	8				7.9	RAN —
			CLS.			REC 4.2'
	9				Box 3	LOSS 0.8
			S. m.h, m.-dk.gr, occ. shy			UNACC 0.8
	10					DEP+T/DEP 100
			Closely spaced shy ptgs			PULL #3
	11					START 6:40
			Occ gr. cl coal/fld btwn			END 7:14
	12				12.L	TIME 34 min
			11.0 & 15.0 w/ 0.2 L.C.			DRL 34 min
	13				Box 4	RAN —
						REC 7.1
	14					LOSS 0.2
481.1	15					UNACC 0.2
			SLS			
	16		sa, m.h m.gr.		16.0	
			GRADING INTO			
478.8	17				Box 5	T/DEP 123
			SLS			
	18		CLY, s.-m.h, m-dkgr .pts			
			shy hor., cl, coa ptgs @			
	19		17.9, 18.5, 18.9 grading			
476.4			into		19.5	
	20		SLS (CONT)		Box 6	(CONT)

ELEVATION TOP OF HOLE	Hole No. R-56/1
496/	

PROJECT	INSTALLATION	SHEET 2
GALLIPOLIS LOCK & DAM	ORH-CD	OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	DEP 20.2
	21		S.-m.h, m-dk.gr, shy occ			Pull #4
	22		shy w/closely spaced hoz			START 7.26
			pts w/tr.gr. coal/hzd.bkn			END 7:49
	23		@ 19.7 + 20.5 - 20.7			TimE 23min
			R.bz. Icl Len @ 21.5 - 22.3			DRL 23min
472.1	24				23.3	RAN —
			ICL			REC 8.3
	25					Loss 0.8
			S-m.h, motted-R.bz,		Box 17	UNACC 0.8
	26					
			SLK vs.s. 24.0 - 26.4 w/			T/DEP 26.4
	27					DEP 26.8
			0.8 Lc bkn. 26.4 - 31.6		27.4	Pull #5
	28					START 8:37
			w/4.0 Lc, 1.0 Lc btwn 31.6			END 9:00
	29					TimE 23min
			+ 36.5			DRL 23min
	30					RAN —
	31				8	REC 1.2
						Loss 4.0
	32					UNACC 4.0
						T/DEP 31.6
	33					DEP 32.2
						¹ Pull #6
	34					START 9:21
						END 9:40
	35				34.9	TimE 19min
						DRL 19min
459.6	36		Bottom Hole		9	RAN —
						REC 3.9
	37				34.5	Loss 1.0
						UNACC 1.0 T/DEP 36.5
	38					DEP 37.1
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1980 OF 828-603

PROJECT	HOLE NO.
Gallipolis Lock + Dam	R-56/1

DRILLING LOG	DIVISION ORD	INSTALLATION OEH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

10. SIZE AND TYPE OF BIT 4 YSH "

2. LOCATION (Coordinates or Station) MONO R-56 STA 1+40B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-56/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 2/4/89 COMPLETED 2/4/89

7. THICKNESS OF OVERBURDEN Ø 497.2

17. ELEVATION TOP OF HOLE 497.2

8. DEPTH DRILLED INTO ROCK 37.8

18. TOTAL CORE RECOVERY FOR BORING 32.3 %

9. TOTAL DEPTH OF HOLE 459.4

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			SANDSTONE			Pull #1
			m.c.s, m.h, m.gr. bkn		Boy 1	START 10:20
496.1	1		0.0 - 1.1			END 10:30
			CLS			Time 10 min
	2		m.-dk.gr., s-m.h, occsly			DRL 10 min
						RAN —
	3		0.4 S.gr. CL. 1.1-1.5; 95°		3.6	REC 5.1
						Loss Ø
	4		SLK ptg @ 4.0-4.2 ; 60			UNACC Ø
	5		Ptg in R.be ICL 20. 6.5-		Boy 2	DEP 5.0 / TIDEP 5.1
			6.9 : grading into			Pull #2
	6					START 10:56
	7				6.9	END 11:05 / Time 9 min
489.9						DRL 9 min
	8		SANDSTONE		Box 3	RAN —
			SL. A.g., m.h. m.gr.			REC 5.11
	9					Loss Ø
487.7						UNACC Ø
	10		CLS		10.7	DEP 10.2 / TIDEP 10.1
			s.-m.h, m-dk.gr, shy			Pull #3
	11		w/shs LENS. VE. S-9.7-9.8		Boy 4	START 11:19
	12					END 11:31
			shy 11.1-11.5; 12.2			Time 12 min
	13				13.5	DRL 12 min / TIDEP 12.9
	14					RAN —
482.6					Box 5	REC 2.7
	15		SLS			Loss Ø
			sa, s.-m.h, m.gr. pts			UNACC Ø
	16		hor grading into			DEP 15.2
480.3						Pull #4
	17		CLS		17.3	START 12:20 / END 12:27 / Time 7 min / DRL 7 min / Loss Ø / UNACC Ø / RAN — / REC 4.8
	18		shy, s.-m.h, m-dk.gr			TIDEP + DEP 17.9
			w/occ SLK ptgs ; bkn		Box 6	Pull #5
	19		19.2-19.7 w/fr gr.CL.			START 12:40 / END 12:47 / Time 7 min / Loss Ø / UNACC Ø / DRL 7 min / RAN —
	20		coa (CONT)		(CONT)	REC 2.4 / T/DEP 20.0

PROJECT Gallipolis Lock & Dam **HOLE NO.** R-56/2

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DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE	497.2		**Hole No.**	R-56/2	
PROJECT Gallipolis Lock & Dam		**INSTALLATION** OEH-CD		**SHEET** 2	
				OF 2 SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	DEP 20.1
476.1	21		ge s-ucs		20.8	Pull #6
	22		ICL		Box 7	START 13:05
			R.BR., S.-M.h. bKN 21.2-			END 13:20
474.5			21.6 W/SLK			TimE 15min
	23		SLS			DEL 15min
	24		CHy, S.-M.h., M.-dk.ge.mass			RAN —
472.9						REC 4.2
					24.3	Loss 0
	25		ICL			UNACC 0 T/DEP 24.3
			MOLTED-R.bR, S-m.h.,		Box 8	DEP 25.1
	26					Pull #7
			bKN W/SLK C.2LC BtwN			START 13:39
	27					END 13:52
			24.3, 29.5, 11 L.C btwN			TimE 28min UNACC 0.2
	28					DEL 28min
			29,5 & 34.5		28.0	RAN —
	29					REC 5.0
	30				Box 9	Loss 0.2
						DEP 29.6 T/DEP 29.5
	31					Pull #8
						START 14:20
	32					END 14:52
						TimE 32min
	33				32.7	DEL 32min
						RAN —
	34					REC 3.9
					Box 10	Loss 1.1
	35					UNACC 1.1
						DEP+T/DEP 34.5
	36					Pull #9
						START 15:11
459.3	37		Bottom Hole		37.3	END 15:27
						TimE 16min
	38					DEL 16min
	39					RAN —
	40					REC 3.2
	41					Loss 0 DEP 37.8
	42					UNACC 0
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1968 OF-628-863

PROJECT	HOLE NO.
Gallipolis Lock + Dam	R-56/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MLWD R-57 STA. 1+30 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-57/1

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.0

8. DEPTH DRILLED INTO ROCK 37.9

9. TOTAL DEPTH OF HOLE 459.1

10. SIZE AND TYPE OF BIT 4X5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A | **DISTURBED** N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/2/89 COMPLETED 2/4/89

17. ELEVATION TOP OF HOLE 497.0'

18. TOTAL CORE RECOVERY FOR BORING 37.0'

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE		Box 1	Pull #1
	1		m-c.g., m.h., m.gr Thin Bdd			START 22:15
495.4						END 22:30
	2		CLS/SLS			TIME 15min
			Interbdd, s-m.h, m-dk.gr.S.			DRL 15min
	3		1.6-2.1, bkn 2.9-3.2	3.8		RAN —
492.8						REC 4.9
	4		SANDSTONE			LOSS Ø
			shy, f.g., m.h., m.gr 45°			UNACC Ø
	5		PTgs @ 3.8 & 4.3, SLS.Len			DEPTH/DEP 4.9
			5.0-5.4, bkn 5.4-5.9 Ang		Box 2	Pull #2
	6		(45°) CONTACT			START 22:38
490.6						END 22:48
	7		CLS			TIME 10min
			s-m.h, m-dk.gr, pts, shy	2.4		DRL 10min
	8		w/tr ge.cl coa & lens			RAN —
			on hor pts bkn (mech)			REC 5.1
	9		6.4-8.4 s/s Len 10.1-		Box 3	LOSS Ø
			10.7 BKN 11.7-12.0, hvy			UNACC Ø
	10		ge.cl. LENES 12.0-14.7			DEPTH/DEP 10.0
			O. & L.C. 11.0-14.7			
	11			14.1		Pull #3
	12					START 23:00
						END 23:25
	13				Box 4	TIME 25min
						DRL 25min
	14					RAN —
						REC 9.8
481.9	15			14.7		LOSS 0.4
						UNACC 0.4
	16		SLS		Box 5	
			Sa, m.h., m.gr hor PTgs			
480.0	17		w/tr.gr.cl, coa, @ 16.3			
			grading into			
	18		SLS			
			cly, s.-m.h, m-dk.gr, pts	18.3		
			shy w/occ ge cl coa on Hor		Box 6	
477.7	19		PTgs grading into			
			CLS			DEPTH/DEP 19.2
	20		(CONT)		CONT	Pull #4

PROJECT Gallipolis Lock & Dam **HOLE NO.** R-57/1

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		*CLS*		Box 6	Pull #4
	21		S.-m.h., m.-dk.gr. r.br			START 9:00
			21.2-21.5; m spaced			END 9:55
	22		HOR ptgs to 24.0		22.1	TIME 55min
						DRL 55min
	23					RAN —
473.0	24				Box 7	REC 7.4
						LOSS 0.5
			ICL			UNACC 0.5
	25		dk.gr-r.br, SLK s.-dk.br			
	26		24.0-26.0, 0.5 L.Cb+wn		26.0	
	27		26.0 '27.1 becoming			T/DEP 27.1
	28		R.br @26.0 6kn w/slt		Box 8	DEP 27.5
						Pull #5
	29		27.1-31.4 0.9 LC. R+wn			START 10:12
	30		31.4 ' 37.0		30.1	END 10:40
						TIME 28min
	31					DRL 28min
						RAN —
						REC 4.3 T/DEP 31.3
	32				Box 9	LOSS 0
	33					UNACC 0
						DEP 32.9
	34				33.8	Pull #6
						START 10:55
	35				Box 10	END 11:21
						TIME 26min
	36					DRL 26min
						RAN —
460.0	37		Bottom Hole		37.0	REC 4.7
						LOSS 0.9
	38					UNACC 0.9 T/DEP 37.1
						DEP 37.0
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1968 OF-629-603

PROJECT	HOLE NO.
GALLIPOLIS LOCK+DAM	R-57/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinate or Station) Mono R-57 STA 0+90A

3. DRILLING AGENCY W.G. Jaoues

4. HOLE NO. (As shown on drawing title and file number) R-57/2

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 496.8

8. DEPTH DRILLED INTO ROCK 39.6

9. TOTAL DEPTH OF HOLE 457.2

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/6/89 COMPLETED 2/6/89

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 39.0 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			SANDSTONE			PULL #1
	1		LT.GR, M.H, M-CGR, FLAGGY			START 7:45
495.9			BKN PN ~0.1 SPACE			END 8:04
	2		FC SURFACE STAIN		1	TIME 19min
			0.1-1.1 CLAY SEAM 1.1			DRL 6min
	3		SLS/CLS			RAN —
			SLS. GR, S, SH, 1.9-1.7		3.7	REC 4.7
	4		3.7-5.3-7.8-8.9, 9.4-9.8			LOSS ∅ UNACC ∅
			BKN PN .3 SPACING			DCP 4.7 T/DCP 4.5
	5		CLS GR. S. SH 1.7-3.7			PULL #2
			5.3-7.8, 8.9-9.9, 9.8-10.1		2	START 8:26
	6		BKN 2.9-2.7, mech.			END 8:34
			4.7-4.8, 5.3-5.6, 9.1-9.9		7.2	TIME 8min
	7		9.7-9.8, C1-R.6R			DRL 8min
			5.3-7.8 w /occ SLK			RAN —
	8					REC 5.0
					3	LOSS ∅
	9					UNACC ∅
						T/DCP 8.9 DCP 9.7
486.7	10				10.3	PULL #3
			SLS			START 8:41
	11		GR, S-M.H/SH			END 8:56
	12		BKN PN, CL 11.2-11.8		4	TIME 15min
						DRL 15min
	13		S.S. GR, M.H., F-VEF.GR			RAN —
						REC 4.9
	14		M.6-15.2; 15.6-15.9		14.1	LOSS ∅
						UNACC ∅ T/DCP 14.4
	15		BKN 15.3-15.6-20.8-21.1			DCP 14.6
					5	PULL #4
	16					START 9:10
						END 9:19
	17					TIME 9min
					17.6	DRL 9min
	18					RAN —
					6	REC 4.3
	19				(CONT)	LOSS ∅
						UNACC ∅ T/DCP 18.9
	20		(CONT)			DCP 19.4
						PULL #5

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

(TRANSLUCENT)

PROJECT Gallipolis Lock + Dam   HOLE NO. R-57/2

PROJECT GALLipolis Lock + DAm				INSTALLATION ORHCD			SHEET OF SHEETS	
ELEVATION a	**DEPTH** b	**LEGEND** c	**CLASSIFICATION OF MATERIALS** (Description) d		**% CORE RECOV- ERY** e	**BOX OR SAMPLE NO.** f	**REMARKS** (Drilling time, water loss, depth of weathering, etc., if significant) g	
	20		SLS			6	PULL #5	
	21					21.1	START 9:30	
	22						END 9.95	
							TIME 15min	
	23					7	DRL 15min	
							PAN — LOSS Ø	
972.9							REC 5.0 UNACC Ø	
	24						T/DCP + DCP 23.9	
			ICL			24.3	PULL #6	
	25						START 9:56	
			DK.GR. - R.BR, S-M.H.				END 10:35	
	26					8	TIME 39min	
			OCC SLK, dKGR. ABOVE				DRL 39min	
	27						PAN —	
			26.5, R-BR Below, OCC				REC 3.8	
	28						LOSS 1.2	
			MOTTLED, CL ABOVE 35.2				UNACC 1.2	
	29					28.9	T/DCP 28.9	
			SLT below 35.2, BRW				DCP 29.4	
	30						PULL #7	
			29.3 - 29.8, 33.0 - 39.1			9	START 10:43	
	31						END 11:17	
							TIME 34min	
	32						DRL 34min	
						32.7	PAN —	
	33						REC 5.2	
							LOSS Ø	
	34						UNACC Ø T/DCP 34.0	
						10	DCP 34.4	
	35						PULL #8	
	36						START 12:20	
						36.9	END 12:57	
	37						TIME 37min	
						11	DRL 37min	
	38						PAN —	
							REC 5.0	
457.8	39		Bottom Hole			39.0	LOSS Ø	
							UNACC Ø T/DCP 39.0	
	40						DCP 39.4	
	41							
	42							
	43							
	44							

ENG FORM 1836-A
JUN 67

GPO: 1969 OF—329-243

| PROJECT GALLipolis Lock + DAm | HOLE NO. R-57/2 |

DRILLING LOG

DIVISION ORD	**INSTALLATION** ORH-CD	**SHEET 1 OF 2 SHEETS**

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO R-58 STA 0+80 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-58/1

5. NAME OF DRILLER DAVE HARPER

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 496.5

8. DEPTH DRILLED INTO ROCK 37.9

9. TOTAL DEPTH OF HOLE 458.6

10. SIZE AND TYPE OF BIT 4 x 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B.-53-MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/4/89 COMPLETED 2/6/89

17. ELEVATION TOP OF HOLE 496.5

18. TOTAL CORE RECOVERY FOR BORING 37.0

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5			SANDSTONE			Pull #1
	1		m.-c.g., m.h. STA bR		Box 1	START 12:25
						END 12:45
494.5	2					TimE 20min
	3		CLS			DRL 20min
			S.-m.h., m.-dk.gR VE-S,			RAN —
			bkN 0.2-1.6 w/0.3LC		3.7	REC 4.4
	4					LOSS 0.3
491.8						UNACC 0.3 T/DEP 4.7
	5		SLS			DEP 5.0
			sa, s.-m.h., m.-dk.gR.		Box 2	Pull #2
	6					START 12:51
490.0						END 1:06
	7		CLS/SLS			TimE 15min
			INTerbdd, s.-m.h., m.dk		24	DRL 15min
	8		gR, w/closely spaced slk			RAN —
			ptgs & s.gR.cl. coarse			REC 4.0'
	9		VE bkN 8.4-8.5 w/a.5LC		Box 3	LOSS 0.2 T/DEP 8.9
			0.6 LC btwn 8.9 & 12.0			UNACC 0.2 DEP 9.5
	10					Pull #3
	11				12.9	START 1:17
						END 1:57
	12					TimE 40min
483.7					Box 4	DRL 40min
	13		SLS			RAN
			sa, s.-m.h, m.gR			REC 8.4
	14					LOSS 0.6
			GRADING			UNACC 0.6
	15				18.5	
480.6	16		SLS		Box 5	
	17		Cly, s.-m.h., m.-dk.gR			
			gR.cl coa ptg @ 16.3			
478.6			GRADing into			T/DEP 17.7
	18		CLS		18.5	
	19		s.-m.h., m.-dk.gR, pts		Box 6	DEP 18.5
			slk, w/closely spaced			Pull #4
	20		(cont)	(cont)	(cont)	(cont)

PROJECT Gallipolis Lock & Dam   **HOLE NO.** R-58/1

				ELEVATION TOP OF HOLE 496.5			Hole No. R-58/1

PROJECT: Gallipolis Lock & Dam

INSTALLATION: ORH-CD

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					
	21		CLS hor. ptgs occ. gr. cl		Box 6	Pull #4 START 2:05
	22		Coa, Icl r. br. 21.0-21.7			END 2:55 TIME 50 min
					22.3	DRL 50 min
473.2	23		Cl. se @ 21.5-21.6			RAN —
	24		ICL mottled-r.br, bkn,		Box 7	REC 7.9 LOSS 0.7
	25		s.m.h. 0.7 lc btwn 23.3			UNACC 0.7
						Pull #5
						START 7:35
	26		¢ 26.5, 2.5 lc btwn			END 8:07
					26.5	TIME 32 min
	27		26.5 ¢ 29.0, 0.4 lc btwn			DRL 32 min
						RAN —
	28		29.0 ¢ 37.0		Box 8	REC 0
						LOSS 2.5
	29					UNACC 2.5
						DEP & T/DEP 29.0
	30					
	31					Pull #6
	32					START 8:18
					32.7	END 9:08
	33					TIME 50 min
						DRL 50 min
	34					RAN —
						REC 7.6
	35				Box 9	LOSS 0.4
						UNACC 0.4
	36					
459.5	37		Bottom Hole		37.0	T/DEP 37.0
	38					DEP 37.9
	39					
	40					
	41					
	42					
	43					
	44					

Side notes: T/DEP 26.5, DEP 22.9

DRILLING LOG	DIVISION OPD	INSTALLATION OPH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
MONO P-58 STA 0+90B

3. DRILLING AGENCY
W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number)
R-58/2

5. NAME OF DRILLER
DAVE HARPER

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø @ 497.2

8. DEPTH DRILLED INTO ROCK 38.9

9. TOTAL DEPTH OF HOLE 458.5

10. SIZE AND TYPE OF BIT 4 NSH

11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL
B.-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN
DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/6/89 COMPLETED 2/6/89

17. ELEVATION TOP OF HOLE 497.2

18. TOTAL CORE RECOVERY FOR BORING 375 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			SANDSTONE			Pull #1
	1		GR-LT.GR MH-H COVEF g.			START 10:16
			m-cg. 0.0-1.7 F.g. 1.0-1.8 cLs			END 10:35
495.5	2		Seam .9, 1.1, CAL crm 0.0-1.5		1	TIME 19 min
			BKN 0.0-0.7 1.6-2.5			DPL 19 min
	3		SLS/CLS			RAN 4.0 LOSS 1.1
	4		SLS. GR, S, Sh. 4.0-7.9			REC 2.9 UNACC 1.1
				4.4		DEPTH/DPP 4.0
	5		8.7, -8.8, 12.3-13.0, 13.3-			Pull #2
	6		13.8, CLS, GR S, Sh, 2.3		2	START 10:50
						END 11:05
	7		-4.0, 7.4-8.2, 8.8, -12.3			TIME 15 min
						DPL 15 min
	8		13.0-13.3, BKN 2.6-4.0, 5.5	8.0		RAN 4.0
						REC 4.0
	9		4.0, 9.2-9.4, Sa 4.0-5.2			LOSS Ø T/DPP 8.0
						UNACC Ø DPP 8.9
	10		6.0-7.2 BKN pw /0.1		3	Pull #3
						START 11:20
	11		SPACING & CL coating			END 11:55
						TIME 35 min
	12		9.2-10.5, 11.6-13.8	11.7		DPL 35 min
						RAN 9.5
	13				4	REC 8.4
483.4						LOSS 1.1
	14		SLS			UNACC 1.1
	15		GR. S.-M.H, Sa			
				15.4		
	16		SS. SEAM, GR M.H, VEF-FG			
	17		14.3-15.7 Sh w/BKN pw		5	
	18		0.1 SPACE BELOW 19.1, CLS,			T/DEP 17.5
						DEP 17.5
	19		GR. S. Sh. 20.7-30.1			Pull #4
						START 12:35
	20		BKN 21.4-22.2	19.8		END 1:16
						(CONT)

ENG FORM 1836
MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Lock+Dam	HOLE NO. R-58/2

PROJECT GALLIPOLIS Lock + DAm
INSTALLATION ORH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					
	21		SLS			Pull #4
	22				6	TimE 91min
						DRL 91min
	23					RAN 9.0
473.7						REC 8.6
	24		JCL	23.7		LOSS .4
						UNACC .4
	25		dk.gr. - R.BR, S., claying		7	
	26		To sl, occ slt			
	27		dk.gr. ABOVE 27.5 AND			T/DCP 26.5
	28		R-BR Below 27.5	22.8		DCP 27.9
						Pull #5
	29		Bkn 34.1-34.5, 36.4-36.8			START 1:32
						END 1:55
	30				8	TimE 23min
						DRL 23min
	31					RAN 5.5
						REC 4.8
	32					LOSS 1.1
						UNACC 1.1
	33			32.4		T/DCP 32.4
						DCP 32.9
	34				9	Pull #6
						START 2:11
	35					END 2.35
						TimE 24min
	36					DRL 24min
				36.2		RAN 5.5
	37					REC 5.5
					10	LOSS 0
459.3	38		BOTTOM HOLE	37.9		UNACC 0
						T/DCP 37.9
	39					DCP 38.9
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO 1949 OF—329-243

PROJECT GALLIPOLIS Lock+DAm   **HOLE NO.** R-58/2

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam	10. SIZE AND TYPE OF BIT 4 x 5½
2. LOCATION (Coordinates or Station) Mono R-59 STA 0+30B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W & J AGUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-5911	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER Dennis Thompson	14. TOTAL NUMBER CORE BOXES 10
	15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	16. DATE HOLE	STARTED 2/10/89	COMPLETED 2/10/89

7. THICKNESS OF OVERBURDEN Ø 496.1	17. ELEVATION TOP OF HOLE 496.1
8. DEPTH DRILLED INTO ROCK 34.7	18. TOTAL CORE RECOVERY FOR BORING 36.8 %
9. TOTAL DEPTH OF HOLE 461.5	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.1			SLS/CLS			Pull #1
	1		SLS, GR, S-MH, Sh 0.0-			START 6:00
			0.9 2.9-2.8, CLS, GR, S, Sh		1	END 6:10
	2		0.9-2.9, 2.8-3.1 BKN 0.0-			TIME 10 min
			0.6 BKN PN, 2 SPACING			DRL 10 min
493.0	3		0.6-3.1			RAN 4.6
			SANDSTONE	3.7		REC 4.6
	4		GR, M.H., F-VF.G. SLT			LOSS Ø
491.3			BKN 4.3-44			UNACC Ø T/D 4.5
						DEP 4.9
	5		SLS			Pull #2
			GR, S, OCC CLAYEY /		2	START 6:25
	6					END 6:35
			Shaley, CL 5.9-6.8			TIME 10 min
	7			2.4		DRL 10 min
			7.7-8.1, 9.0-10.6, 11.3-11.4			RAN 5.4
	8					REC 5.2
			12.6-12.9, BKN 5.0-5.5			LOSS 0.21
	9				3	UNACC 0.2
			CLS 8.6-8.6, GN, GR, S,			T/D DEP 9.8
	10					DEP 10.0
			Sh. BKN 11.8-12.1			Pull #3
	11			10.7		START 6:45
						END 7:00
	12				4	TIME 15 min
						DRL 15 min
	13					RAN 4.7
						REC 4.7
	14					LOSS Ø
481.2					19.5	UNACC Ø
	15		SANDSTONE			T/D DEP + DEP 14.7
480.5			GR, M.H., F-VF.G.			Pull #4
	16		SLT SEAM 14.9-15.1			START 7:15
					5	END 7:30
			SLS			TIME 15 min
	17		GR. S-M.H., Sh BKNPN			DRL 15 min
						RAN 4.1
	18		.5 ABOVE 19.0 +.3 BELOW		18.1	REC 4.1
			CL BELOW 19.3		6 (CON'T)	LOSS Ø
	19					UNACC Ø T/D-DEP 19.0
	20		(CON'T)			(CON'T)

PROJECT				INSTALLATION		SHEET 2
GALLIPOLIS Lock + DAM				OBH-CD		OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS			
	21				6	DrP 20.0
979.1	22				21.8	Pull #5 START 8.45 END 9:00 TIME 15min
	23		CLS Gr. S. Sh, BKN 22.0			DRL 15min RAN 5.5 REC 5.3
	24		22.3, 23.1-23.7		7	LOSS .2 UNACC .2
471.5						Dept/DcP 24.5
	25		ICL			Pull #6
	26		R. BR, S-M.H. occ ANy		25.5	START 9:15 END 9:40
	27		Pn. w/SLK, occ mottled			TIME 25min
	28		w/Gr-GnGr, Sh		8	DRL 25min RAN 4.9 REC 4.5
	29		R-GR ABOVE 26.5		29.4	LOSS .4 UNACC .4
	30		BKN 32.6-33.2; 33.9-			T/DcP 29.9 DcP 29.9
	31		34.4		9	Pull #7 START 9:55 END 10:10 TIME 15min
	32					DRL 15min RAN 5.1
	33				33.1	Pull #8 START 10:30 END 10:38 REC 5.1 LOSS Ø UNACC Ø
	34					TIME 8min DRL 8min T/DcP 31.5 DcP 34.7
	35				10	RAN 2.3 REC 2.3
	36					LOSS Ø UNACC Ø
459.3	37		Bottom Hole		36.8	T/DcP + DrP 36.8
	38					
	39					
	40					
	41					
	42					
	43					
	44					

DRILLING LOG

DIVISION	ORD
INSTALLATION	ORH-CD

1. PROJECT: Gallipolis Lock + Dam

2. LOCATION (Coordinate or Station): Mono R59 STA 0+16A

3. DRILLING AGENCY: W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number): R-59/2

5. NAME OF DRILLER: Wayne Tice

6. DIRECTION OF HOLE: ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN: Ø 495.6

8. DEPTH DRILLED INTO ROCK: 37.1

9. TOTAL DEPTH OF HOLE: 458.5

10. SIZE AND TYPE OF BIT: 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL: B.-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: N/A — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES: 10

15. ELEVATION GROUND WATER: N/A

16. DATE HOLE: STARTED 2/28/89 — COMPLETED 2/28/89

17. ELEVATION TOP OF HOLE: 495.6

18. TOTAL CORE RECOVERY FOR BORING: 35.6

19. SIGNATURE OF INSPECTOR: JMD

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
495.6			SLS/CLS			Pull #1
	1					START 7:10
			SLS, GR, S-M.H. Sh		1	END 7:25
	2					TIME 15min
			Clayey, CLS GR, S			DRL 15min
	3					RAN 4.7
			Sh, SLT			REC 4.7
	4				3.8	LOSS Ø
			SANDSTONE, GR,			UNACC Ø T/DEP 4.7
	5					DEP 5.0
			M.H. F-V.E.F.G., SLT		2	Pull #2
	6					START 7:35
			2.1 -2.3, 2.6 -3.9			END 7:45
	7					TIME 10min
			SLS 0.0-1.7, 3.9-7.9		7.5	DRL 10min
	8					RAN 5.1
			9.8 -12.5, 12.9-18.8, 19.9			REC 5.1
	9				3	LOSS Ø
			20.4, CLS 1.7-2.1			UNACC Ø T/DEP 9.8
	10					DEP 10.0
	11			7.9 -9.8, 12.5 -12.9	10.6		Pull #3
						START 7:50
			18.8 -19.9, 20.4 -20.9,			END 8:05
	12				4	TIME 15min
	13			BKN 0.0- 0.8, 7.9 -8.3			DRL 15min
						RAN 4.8
	14			9.2 -9.6, SG SLS 10.7-			REC 4.8
					14.4	LOSS Ø
	15			10.9, 13.3-13.7, 14.7-14.8			UNACC Ø T/DEP 19.6
						DEP 19.8
	16			high ANG FRAC 11.9-		5	Pull #4
						START 8:12
	17			11.7, 19.4-19.7, SLS			END 8:20
						TIME 8min
	18			Less clayey Below			DRL 8min
					18.0	RAN 4.8
	19			12.9		6 (CONT)	REC 4.8
						LOSS Ø UNACC Ø
	20			(CONT)			T/DEP + DEP 19.4
						Pull #5

PROJECT Gallipolis Lock + Dam **INSTALLATION** ORH-CD **SHEET** 2 **OF** 2 **SHEETS**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS			Pull #5
	21				6	START 8:28
473.9					21.7	END 8:40
	22					TimE 12 min
			ICL			DRL 12 min
	23					RAN 5.6
			R. BR, S. - M.H. Sh,		7	REC 5.1 UNACC Ø
	24					LOSS Ø
			NUM SLK, occ			DCP 29.9
	25				25.0	T/DCP 29.5
			MOTTLED w/ GR, - GN.GR.			Pull #6
	26					START 8:50
			BKN, DKGR. ABOVE 29.0		8	END 9:05
	27					TiME 15min
			BKN 23.4 - 26.2, 27.6 -			DRL 15min
	28					RAN 5.2
			29.9			REC 5.2
	29				28.8	LOSS Ø
						UNACC Ø
	30					T/DCP + DCP 29.7
					9	Pull #7
	31					START 9:15
					31.9	END 9:35
	32					TimE 20min
						DRL 20min
	33					RAN 4.7
					10	REC 4.4
	34					LOSS 0.3
						UNACC 0.3
	35					DCP 39.6 T/DCP 39.9
460.0			Bottom Hole		35.6	Pull #8
	36					START 9:45 T/DCP 33.6
	37					END 10:00
						TimE 15min
	38					DRL 15min DCP 37.1
						RAN 1.2
	39					REC 1.2
						LOSS Ø
	40					UNACC Ø
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO: 1969 OF—329-243

PROJECT Gallipolis Lock + Dam   **HOLE NO.** R-59/2

DRILLING LOG	**DIVISION** ORD

INSTALLATION ORH-CD   **SHEET** 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO R-60 STA 0+26A

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-60/1

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0' 496.5

8. DEPTH DRILLED INTO ROCK 39.9

9. TOTAL DEPTH OF HOLE 456.6

10. SIZE AND TYPE OF BIT 4 N5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN   DISTURBED N/A   UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE   STARTED 2/20/89   COMPLETED 2/20/89

17. ELEVATION TOP OF HOLE 496.5

18. TOTAL CORE RECOVERY FOR BORING 36.7

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5			SLS/CLS/SS			Pull #1
	1		SLS: GR, S.-M.H, BKN			START 8:'A
						END 8:40
	2		PN ~.5 SPACING, OCC		1	TIME 21min
						DRL 21min
	3		interbdd w/cls+ss			RAN 4.9
					3.5	REC 4.0
	4		Sa 0.5-0.7, 3.3-3.9, 13.1-			LOSS 0
						UNACC 0
						Dep+T/Dep 4.9
	5		13.9, 15.7-16.1, CL: 6.0-		2	Pull #2
	6		11.1, 17.9-19.8, x 6.9-			START 8:51
						END 8:59
	7		BKN 0-0.7, 8.4-9.6,		7.1	TIME 8min
						DRL 8min
	8		12.3-12.6, 14.5-19.6,			RAN 5.0
					3	REC 5.0
	9		19.8-20.3, 23.6-29.3			LOSS 0 'UNACC 0
						Dep+T/Dep 9.9
	10		CLS, Sh., GR, S. 2.5-2.9			Pull #3
					10.8	START 9:08
	11		12.0-12.6, 19.8-20.9			END 9:20
						TIME 12min
	12		22.1-29.3, high ang		4	DRL 12min
						RAN 5.1
	13		Frac 3.5-3.8, 5.6.			REC 5.1
						LOSS 0
	14		GR, M-H. F-V.F.G.			UNACC 0
					14.5	Dep 19.9
						T/Dep 9.5
	15		3.9-4.8, 13.4-15.1, BKN			Pull #4
						START 9:33
	16		PN ~.2 SPACING 16.8-19.8		5	END 9:45
						TIME 12min
	17					DRL 12min
						RAN 9.7
	18					REC 9.6
					18.3	LOSS 0.1
	19				6 (CONT)	UNACC 0.1 T/Dep A.2 Dep 19.0
	20		(CONT)			Pull #5 (CONT)

ELEVATION TOP OF HOLE				496.5		Hole No. R-60/1

PROJECT				INSTALLATION		SHEET 2
Gallipolis Lock + Dam				OCH-CD		OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS/SS			PULL #5
	21				6	START 10:00
	22				21.8	END 10:16
						TIME 16 min
	23				7	DRL 16 min
						RAN 5.1
						REC 5.1 UNACC 0
472.2	24					LOSS 0 DCP 24.6
						T/DCP 24.5
	25		ICL		25.2	PULL #6
			R.BR, S.-M.H., NUM			START 10:29
	26		SLK, CL 24.3-30.9		8	END 11:08
	27		SA + SLT BELOW 30.9			TIME 39 min
						DRL 39 min
	28		DKGR. ABOVE 26.3, OCC			RAN 5.0
	29		MOTTLED w/GR THROUGHOUT		28.7	REC 4.9
						LOSS 0.1
						UNACC 0.1 DCP 29.3
	30		SEVERELY BKN 25.0-25.2		9	T/DCP 29.5
	31		26.1-26.3, 26.7-27.0			PULL #7
						START 12:10
	32		27.8-28.1, 28.7-29.3,		32.1	END 12:48
	33		30.7-30.9			TIME 38 min
						DRL 38 min
	34				11	RAN 5.0
						REC 3.7
	35					LOSS 1.3
						UNACC 1.3
	36					T/DCP 34.3
459.8			Bottom Hole		36.7	DCP 34.9
	37					PULL #8
						START 13:14
	38					END 13:44
						TIME 30 min
	39					DRL 30 min
						RAN 5.0
	40					REC 5.0
						LOSS 0
	41					UNACC 0 T/DCP 39.3
	42					DCP 39.9
	43					
	44					

ENG FORM 1836-A JUN 67		GPO 1969 OF—329-243	PROJECT Gallipolis Lock+Dam	HOLE NO. R-60/1

DIVISION	INSTALLATION	SHEET 1
ORD	ORH CD	OF 2 SHEETS

1. PROJECT
GALLIPOLIS LOCK + DAM

10. SIZE AND TYPE OF BIT 4 X 5K

2. LOCATION (Coordinates or Station)
MONO R-60 STA 0+60A

11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
M.S.L

3. DRILLING AGENCY
W. G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL
B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number)
R-60/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER
DAVE HARDER

14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/20/89 COMPLETED 2/22/89

7. THICKNESS OF OVERBURDEN Ø 496.4

17. ELEVATION TOP OF HOLE 496.4

8. DEPTH DRILLED INTO ROCK 36.4

18. TOTAL CORE RECOVERY FOR BORING 36.4 %

9. TOTAL DEPTH OF HOLE 460.0

19. SIGNATURE OF INSPECTOR JMO

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.4			SLS/CLS/SS			Pull #1
	1		SLS, 9R. S-M.H, Sh, occ		1	START 2:00
	2		Interbdd w/cls/SS			END 2:19
						TIME 19 min
	3		Bkn PN -.2 SPACing O.O			DRL 19 min
					3.5	RAN 3.4
	4		1.9, 6.8 -17.6, 16.3, CLS			REC 3.4 T/DrP 3.5
	5		9R. S, Sh. A. -3.5, 6.8-			LOSS Ø
						UNREC Ø
					2	D>P 5.0
	6		7.0, 7.5,-7.7, 8.3-8.4,			Pull #2
						START 2:25
						END 2:40
						TIME 15 min
	7		9.0 -10.0, 11.7-11.8, 12.0-		7.3	DRL 15 min
						RAN 4.8
	8		12.2, 12.9- 12.6, 19.0-19.8			REC 4.8
						LOSS Ø
						UNREC Ø
	9		Bkn 2.4-2.6, 2.9-3.5, 3.5-			D>P + T/DrP 8.3
					3	Pull #3
	10		3.6, 8.2-8.3 5a .4.2-4.4			START 2:51
						END 3:08
	11		12.6 -13.0, 14.2-14.6, cl,		11.0	TIME 17 min
						DRL 17 min
	12		5.9-5.9 below 20.4			RAN 4.4
						REC 4.4
	13		Bkn ~.4 SPACing 3.5-6.8		4	LOSS Ø
						UNREC Ø
						D>P 13.3 T/DrP 13.2
	14		12.6-16.3, CL cooler			Pull #4
						START 7:22
	15		PN 7.7, 8.1, SS. 9R, m.-		14.7	END 7:40
						TIME 18 min
	16		H. F-V.E.F.9. 13.0-19.2		5	DRL 18 min
						RAN 4.3
	17					REC 4.3
						LOSS Ø
	18					UNREC Ø T/DrP 17.5
					18.3	D>P 18.3
	19				6 (cont)	Pull #5
						START 7:48
	20		(CONT)			END 8:09
						TIME 21 min (CONT)

ENG FORM 1836
MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT GALLIPOLIS LOCK + DAM   **HOLE NO.** R-60/2

PROJECT Gallipolis Lock + Dam			INSTALLATION ORH-CD				SHEET 2 OF 2 SHEETS		
ELEVATION a	**DEPTH** b	**LEGEND** c	**CLASSIFICATION OF MATERIALS** (Description) d		**% CORE RECOV-ERY** e	**BOX OR SAMPLE NO.** f	**REMARKS** (Drilling time, water loss, depth of weathering, etc., if significant) g		
	20		SL/cL/ss				PULL#5		
	21					6	DRL 21min RAN 3.8 REC 3.8 LOSS Ø		
479.2	22					220	UNACC Ø	T/DEP 21.6	
	23		ICL				PULL#6 DCP 22.3		
	24		R.-BR, S-M.H NUM. ANG			7	START 8:19 END 8:29 TIME 30min DRL 30min RAN 4.0 REC 3.9		
	25		SLK, OCC MOTTLED W/				LOSS 0.1 UNACC 0.1		
	26		GR.-GN.GR, CL/SH			25.5		T/DEP 25.5 DCP 25.8	
	27		DK GR, ABOVE 223			8	START 8:39 END 8:50	PULL#7	
	28		SLT 29.5-32.3, SEVERELY				TIME 11min DRL 11min		
	29		BKN 32.3-32.6, 34.2-39.6			29.2	RAN 4.8 REC 4.8		
	30		mech.				LOSS Ø UNACC Ø	T/DEP 30.3	
	31					9	DCP 30.5 START 8:58	PULL#8	
	32					32.6	END 9:24 TIME 26min		
	33						DRL 26min PAN 4.8		
	34						REC 4.8		
	35					10	LOSS Ø UNACC Ø	T/DEP 34.8 DCN 35.0	
	36						START 9:36	PULL#9	
460.0			BOTTOM HOLE			36.9	END 9:47	DCP + T/DCP 36.9	
	37						TIME 11min		
	38						DRL 11min RAW 1.6		
	39						REC 116		
	40						LOSS Ø UNACC Ø		
	41								
	42								
	43								
	44								

ENG FORM 1836-A JUN 67 GPO 1969 OF—329-245

PROJECT Gallipolis Lock + Dam	HOLE NO. R-60 h

DIVISION	INSTALLATION	SHEET 1 OF 2 SHEETS
ORD	ORH-CD	

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO R-61 STA 0+70A

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-61/1

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 496.2

8. DEPTH DRILLED INTO ROCK 38.5

9. TOTAL DEPTH OF HOLE 457.7

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | STARTED 2/20/89 | COMPLETED 2/22/89

17. ELEVATION TOP OF HOLE 496.2

18. TOTAL CORE RECOVERY FOR BORING 38.3 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.2			SLS			PULL #1
	1		9R, S-M.H, SA, w/occ cLS			START 19.14
			BKN PN ~ 0.9 SPACING, BKN			END 19.22
	2		@ 0-0.3, cLS 9R, S, SH,		1	TIME 8 min
			2.1-2.6, 3.3-3.5, Sę 2.8-33			DRL 8 min
	3					RAN 9.7
492.7					3.6	REC 4.7
	4		SANDSTONE			LOSS ∅
			9R. m.H, F.g. ANG, PN, 45° 4.1-			UNACC ∅
491.5			4.4			DEP+T/DEP 4.7
	5		SLS			PULL #2
			9R, S-M.H, SH, Sa 4.7-5.1		2	START 19.28
	6		cL 5.1-7.0			END 19.37
						TIME 9 min
489.2	7				7.3	DRL 9 min
			cLS			RAN 5.0
	8		9R, S, SH, , SLK 8.2-8.4		3	REC 5.0
	9		SEVERELY BKN 9.0-9.5, 9.7-			LOSS ∅
						UNACC ∅
	10		9.8, 10.0-10.2, 10.9-10.6			DEP+T/DEP 9.7
485.2	11				10.9	PULL #3
			SLS			START 7.40
	12		9R, S-M.H, SH, cL, 11.0-			END 7.54
			12.9, 16.6-17.3, 18.9-18.8		4	TIME 14 min
	13					DRL 14 min
	14		ANG, PN. 45° w/SLK 12.2-12.9			RAN 4.9
	15		Sa 12.9-19.1, 16.0-16.2			REC 4.9
						LOSS ∅
	16		SS, 9R m.H, F.g. 14.9-15.3		14.6	UNACC ∅
	17		cLS 9R. S, SH 15.3-15.6			DEP+T/DEP 19.7
					5	PULL #4
	18					START 8.10
					18.2	END 8.20
	19				6 (CONT)	TIME 10 min
						DRL 10 min
	20		(CONT)			RAN 5.0
						REC 5.0
						LOSS ∅
						UNACC ∅
					19.7	DEP 19.7 T/DEP 19.6

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT	HOLE NO.
Gallipolis Lock + Dam	R-61/1

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

PROJECT GALLIPOLIS LOCK + DAM **INSTALLATION** ORH-CD **SHEET** 2 **OF** 2 SHEETS

	20		SLS		6	Pull #5
	21					START 8:39
979.3	22					END 8:50
				21.9		TIME 16min
	23		ICL			DRL 16min
					7	RAN 3.2 T/DEP 22.0
	24		R-BR, S-M.H., SLS,			REC 2.7
			OCC MOTTLED w/gR, CL			LOSS .5
	25					UNACC .5 DCP 24.7
	26		DK gR. ABOVE 25.5,	25.9		Pull #6
						START 9:10
	27		SEVERELY BKN 25.8-28.6			END 9:42
						TIME 32min
	28		SLT 31.6-32.9			DRL 32min LOSS 1.0
					8	RAN 5.6 UNACC 1.0
	29					REC 4.6 T/DEP 28.9
						DCP 28.6
	30					Pull #7
						START 10:00
	31			30.9		END 10:19
						TIME 9min
	32					DRL 19min
					9	RAN 5.0
	33					REC 4.7
						LOSS 0.3
	34					UNACC 0.3
				34.2		DCP 33.5 T/DEP 33.4
	35					Pull #8
						START 10:35
	36					END 10:52
					10	TIME 17min
	37					DRL 17min
						RAN 4.9
457.9	38		Bottom Hole			REC 3.9
						LOSS 1.0
	39			38.3		UNACC 1.0
						DCP 38.5 T/DCP 38.3
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO 1969 OF—329-242

PROJECT GALLIPOLIS LOCK + DAM   HOLE NO. R-6111

DRILLING LOG	**DIVISION** OPD	**INSTALLATION** ORHID	**SHEET** / OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO R-61 STA 14+15A

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-61/2

5. NAME OF DRILLER DAVE HARPER

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 496.3

8. DEPTH DRILLED INTO ROCK 36.7

9. TOTAL DEPTH OF HOLE 457.6

10. SIZE AND TYPE OF BIT 4YSV½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN / DISTURBED N/A / UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/22/89 / COMPLETED 2/22/89

17. ELEVATION TOP OF HOLE 496.3

18. TOTAL CORE RECOVERY FOR BORING 36.7 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
496.3			SLT/clS/SS			PULL #1
	1		SLS, gr. S-M.H, Sh,			START 10:04
	2		occ interbdd w/clS/SS		1	END 10:17 TIME 13min
	3		Sa. SLS 0.2-0.6, 1.9-3.0, 5.3			DRL 13min RAN 4.7
	4		-6.3, 13.0-13.3, 13.9-14.8	3.7		REC 4.7 LOSS ∅ UNACC ∅ DEP 5.0 T/DEP 4.8
	5		BKN 0.0-0.2, 10.0-10.5,		2	PULL #2
	6		21.3-21.5, CLS gr. S., Sh,			START 10:25 END 10.45
	7		1.6-1.9, 6.3-6.5, 8.5-10.1	7.2		TIME 20min DRL 20min
	8		SANDSTONE, gr M.H, F-		3	RAN 4.9 REC 4.9
	9		V&F.g., SLT.·3.0-5.3, 13.3			LOSS ∅ UNACC ∅ T/DEP 9.7
	10		13.9 clayey SLS below			DEP 10.0
	11		20.2	10.9	4	PULL #3 START 10:57 END 11.22 TIME 25min
	12					DRL 25min RAN 9.1
	13					REC 9.0
	14			19.3		LOSS .1 T/DEP 13.8 UNACC .1
	15					DEP 19.0
	16				5	PULL #4 START 12:10 END 12:25
	17			17.8		TIME 15min DRL 15min RAN 3.8 T/DEP 17.6
	18				6 (cont)	REC 3.8 UNACC ∅ LOSS ∅ DEP 18.0
	19					PULL #5 START 12:34 END 12.49
	20		(CONT)			TIME 15min (cont)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT GALLIPOLIS LOCK+DAM **HOLE NO.** R-61/2

PROJECT: GALLiPOLiS LocK+DAM   INSTALLATION: ORH-CD   SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS/SS		6	PULL#5 DRL 15min RAN 3.7
	21					REC 3.7
479.9	22				21.5	LOSS 0 T/DCP 21.5 UNACC 0
	23		ICL			DCP 22.6 PULL#6
			R-BR, S-M.H, SH, NUM		7	START 1:00 END 1:19 LOSS 13 TIME 19min UNACC 13
	29		SLKs, occ mothEd w/			DRL 19min RAN 9.2
	25		GR-GN.GR, BKN		25.3	REC 3.9
	26		DK GR, ABOVE 27.5			T/DCP 25.7 DCP 25.8 PULL#7
	27		SEVERELY BKN 25.0-25.7			START 1:23 END 1:43
	28				8	TIME 20min DRL 20min
	29					RAN 9.1 REC 9.1
	30				29.8	LOSS 0 T/DCP 29.8 UNACC 0
	31					DCP 30.8 PULL#8
	32				9	START 1:56 END 2:17
	33					TIME 21min DRL 21min
	34				33.5	RAN 3.7 T/DCP 33.5 REC 2.5 UNACC 1.2
	35					LOSS 1.2 DCP 34.8 PULL#9
	36					START 2:29 END 2:40 DCP+
459.6	37		BOttOM HOlE		36.7	TIME 11min T/DCP 36.7 DRL 11min
	38					RAN 3.2
	39					REC 3.2 LOSS 0 UNACC 0
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67   GPO 1969 OF—329-243   PROJECT GALLiPOLiS LocK+DAM   HOLE NO. R-61/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-LD	SHEET / OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

10. SIZE AND TYPE OF BIT 4 V5⅛"

2. LOCATION (Coordinates or Station) MONO R-62 STA 1+25A

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-33 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-62/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

5. NAME OF DRILLER DAVE HARPER

14. TOTAL NUMBER CORE BOXES 9

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/28/89 COMPLETED 2/28/89

7. THICKNESS OF OVERBURDEN 0 496.2

17. ELEVATION TOP OF HOLE 496.2

8. DEPTH DRILLED INTO ROCK 33.8

18. TOTAL CORE RECOVERY FOR BORING 33.2 %

9. TOTAL DEPTH OF HOLE 462.4

19. SIGNATURE OF INSPECTOR YMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.2			SLS/CLS/SS			Pull #1
	1		3R. S. - m.H Sh., occ		1	START 10:20
	2		Inter bdd w/cls/ss			END 10:28
						Time 8min
	3		BKN 0.0-0.8, 23-8.1			DRL 8min
	4				3.7	RAN 5.0
			9.9.-10.0 , SL/SLS 2.1-			REC 5.0
	5					Loss 0
			3.9 , 13.2-14.5; 16.2-16.5			UNACC 0
	6				2	DEP 5.2 T/Dep 5.0
			CLS. 9R, S, Sh, 4.9-2.1, 6.1-			Pull #2
	7				7.3	START 10:35
			10.0, 15.1-15.6, 18.4-18.8			END 10:45
	8					Time 10min
			20.0-20.6, SS. 9R, m.H.			DRL 10min
	9				3	RAN 4.9
			F - V.F.9., 9 PAH CONTACT			REC 4.9
	10					Loss 0 T/Dep 9.9
			w/upper SLS 3.9-4.2			UNACC 0
	11					DEP 10.2
			Ang DN ~45° 4.1-4.4			Pull #3
	12				11.9	START 10:52
			High Ang Frac 11.7-13.2			END 11:08
	13					Time 16min
			SS. 9R., m.H. F-V.F.9.		4	DRL 16min
	14					RAN 3.8 T/Dep 13.2
			14.5-15.1 CLAYEY SLS			REC 3.3 UNACC .5
	15					Loss .5 DEP 14.9
			20.6-22.0			Pull #4
	16				15.9	START 12:00
						END 12:15
	17					Time 15min
					5	DRL 15min T/Dep 14.9
	18					RAN 3.7
						REC 3.5 UNACC 0.2
	19					Loss 0.2 DEP 18.2
					19.9	Pull #5
						START 12:20
						END 12:35
	20		(CONT)		6 CONT	Time 15min
						DRL 15min (CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT GALLIPOLIS LOCK+DAM   **HOLE NO.** R-62/1

ELEVATION TOP OF HOLE		Hole No. R-6211
496.2		

PROJECT: Gallipolis Lock + Dam
INSTALLATION: ORH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/LS/SS			Pull #5
	21					RAN 4.7
					6	REC 4.7
						LOSS 0
	22					UNACC 0
						DEP 21.8 T/DEP 21.6
473.3	23		ICL		23.1	Pull #6
						START 12:49
	24		dkgr - R.BR, S-M.H.			END 12:56
						TIME 12min
	25				7	DRL 12min
			Sh, NUM, SLK, dkgr			RAN 9.9 LOSS 0.1
	26					REC 9.3 UNACC 0.1
			ABOVE 28.0, SCURRY, BRN		26.6	DEP + T/DEP 26.0
	27					Pull #7
			27.7-28.2, 29.4-30.6			START 1:04
	28				8	END 1:18
						TIME 19min
	29					DRL 19min
						RAN 9.8
	30					REC 9.8
					32.9	LOSS 0
	31					UNACC 0
						DEP 31.0 T/DEP 30.8
	32				9	Pull #8
						START 1:33
463.0	33		Bottom Hole		33.2	END 1:43
						TIME 10 min T/DEP 33.6
	34					DRL 10min DEP 33.8
	35					RAN 2.5
						REC 2.5
	36					LOSS 0
	37					UNACC 0
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO 1969 OF—329-243

PROJECT: Gallipolis Lock + Dam   HOLE NO. R-6211

ELEVATION TOP OF HOLE							

DRILLING LOG (Cont Sheet) · ELEVATION TOP OF HOLE **495.7** · Hole No. **R-62/2**

PROJECT **Gallipolis Lock + Dam** · INSTALLATION **OPH-CD** · SHEET **2** OF **2** SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS/SS		6	Pull #6
	21					START 1:25
					21.9	END 1:38
473.3	22					TIME 13 min
						DRL 13 min
	23		ICL		7	PAN 5.2
			L-BR, S-MH, SA			REC 5.2
	24					LOSS Ø
			NUM, SLK, BKN, OCC			UNACC Ø
	25				24.9	DEP 24.8
			MOTTLED W/GR-GN-GR			T/DCP 25.0
	26					Pull #7
			DK GRAY ABOVE 26.0			START 1:50
	27				8	END 2:10
			SEVERLY BKN 22.5-24.9			TIME 20 min
	28					DRL 20 min
						PAN 4.6
	29				28.7	REC 4.3
						LOSS 0.3
	30					UNACC 0.3 T/DCP 29.5
					9	DCP 29.8
	31					Pull #8
						START 2:20
463.8	32		Bottom Hole		31.9	END 2:35
						TIME 15 min T/DCP 31.9
	33					DRL 15 min
						PAN 2.9
	34					REC 2.9 DCP 33.3
						LOSS Ø
	35					UNACC Ø
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67 · GPO: 1969 OF—329-242 · PROJECT **Gallipolis Lock + Dam** · HOLE NO. **R-62/2**

Field	Value
1. PROJECT	Gallipolis Lock + Dam
2. LOCATION (Coordinates or Station)	MONO R-63 STA 1+73A
3. DRILLING AGENCY	W.G. JAQUES
4. HOLE NO. (As shown on drawing title and file number)	R-63/1
5. NAME OF DRILLER	DAVID HARPER
6. DIRECTION OF HOLE	☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	∅ 496.2
8. DEPTH DRILLED INTO ROCK	33.0
9. TOTAL DEPTH OF HOLE	462.8
10. SIZE AND TYPE OF BIT	4 x 5½
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	M.S.L.
12. MANUFACTURER'S DESIGNATION OF DRILL	B-53 MOBILE
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED	N/A
UNDISTURBED	N/A
14. TOTAL NUMBER CORE BOXES	10
15. ELEVATION GROUND WATER	N/A
16. DATE HOLE STARTED	2/28/89
COMPLETED	
17. ELEVATION TOP OF HOLE	496.2
18. TOTAL CORE RECOVERY FOR BORING	32.2 %
19. SIGNATURE OF INSPECTOR	JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.2			sLs/cLs/ss.			PULL #1
	1					START 2:00
			SLS, S-M.H., Sh, occ			END 2:15
	2				1	TIME 15min
			Inter bdd w/cLs lss			DRL 15min
	3					RAN 5.0
			bkn pn ~0.9 spacing		3.7	REC 4.5
	4					LOSS 0.5
			BKN 0.0-0.5, cLs			UNACC 0.5
	5					DEP4.7/DEP5.0
			gr., S., Sh, 0.7-1.9, 8.9		2	PULL #2
	6					START 2:20
			-9.3, 9.5, 14.2, 21.3-21.7			END 2:33
	7				7.3	TIME 13min
			22.3-22.5, Sa/sLs 2.6-			DRL 13min
	8					RAN 3.5
			4.0, 14.8-15.7, SS, gr		3	REC 3.5 7/DEP8.5
	9					LOSS 0
			m.H, fr-VEFg., sLT 4.0			UNACC 0
	10					DEP10.0
			-6.1 BKN PNS-0.25/pkg		10.9	PULL #3
	11					START 2:40
			w/occ cL coating pns			END 2:50
	12				4	TIME 10min / DRL 10min
			11.2-13.9, cLayey sLs			RAN 4.6 / REC 4.5
	13					LOSS 0.1 7/DEP13.1
			below 20.5			UNACC 0.1 DEP13.5
	14				19.3	PULL #4 / START 2:55
					5	END 3:05
	15					TIME 10min
					15.7	DRL 10min 7/DEP15.7
	16					RAN 2.6 DEP16.0
						REC 2.6
	17					LOSS 0 / UNACC 0
					6	PULL #5
	18					START 7:25 UNACC 0
						END 7:43
	19					TIME 18min / DRL 18min
					19.3	RAN 4.8
	20			(CONT)		7 (cont)	REC 4.8 / LOSS 0 (CONT)

	ELEVATION TOP OF HOLE	496.2	Hole No. R-631/

PROJECT: GALLiPOLiS LocK+DAm
INSTALLATION: OLH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS/SS			T/DeP 20.5
	21					DeP 20.7
					7	PuLL #6
	22					START 7:50
						END 8:05
473.2	23				22.0	TIME 15min
			ICL			DRL 15min
	24					RAN 3.8
			R-BR, S-M.H., Sh,		8	REC 3.4 T/DcP 24.3
	25					Loss 0.4
			NUm SLK BKN, OCC			UNACC 0.4
	26					DeP 25.5
			MOTTLED w/gR-gN.gR.			PuLL #7
	27				26.8	START 8:12
			CLAYEY, dK gR ABOVE 26.5			END 8:25
	28					TIME 13min
			Scurely BKN 25.9-26.3			DRL 13min
	29				9	RAN 4.2
			32.0 -32.2			REC 4.2 T/DeP 28.5
	30					Loss 0
						UNACC 0
	31				30.5	DeP 29.3
						PuLL #8
464.0	32		Bottom Hole		10	START 8:35
						END 8:50
	33				32.2	TIME 15min
						DRL 15min
	34					RAN 4.7
	35					REC 3.8
	36					Loss 1.0 T/DeP 33.2
	37					UNACC 1.0
	38					DeP 33.4
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO 1969 OF—328-262

PROJECT	HOLE NO.
GALLiPOLiS LocK+DAm	R-631/

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO R-63   STA 2+03A

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-63/2

5. NAME OF DRILLER Dave Harper

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø   496.2

8. DEPTH DRILLED INTO ROCK 32.8

9. TOTAL DEPTH OF HOLE 463.9

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53-MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A   UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 3/1/89   COMPLETED 3/1/89

17. ELEVATION TOP OF HOLE 496.2

18. TOTAL CORE RECOVERY FOR BORING 32.8

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.2			SLS/CLS/SS			Pull #1
	1					START 9:05
			SLS, ge,S.-mH, Sh			END 9:18
	2				1	TIME 13min
			Occ interbdd w/cls/ss			DRL 13min
	3					RAN 4.7
			BKN PNS ~ .4 spacing			REC 4.7
	4				3.7	LOSS Ø
			Sa/s Ls 0.3-1.3, 4.3-9.5			UNACC Ø T/DP 9.7
	5				2	DCD 5.0
			13.4-15.8 w/ss interbdd			Pull #2
	6					START 9:50
			bkn 0.0-0.3, 3.1-3.9			END 10:00
	7				7.2	TIME 10min
			bkn PN-DISPAKE w/occ			DRL 10min
	8					RAN 4.2
			cl coatn PNS 1.3-3.1		3	REC 4.2
	9					LOSS Ø T/DP 8.9
			Cls gr,S. Sh, 3.1-4.3,8.7			UNACC Ø DCD 9.5
	10		-9.3, 11.2-11.9, 19.2-20.5		10.8	Pull #3
						START 10:04
	11					END 10:18 T/DP 11.0
			SS. ge-LTgr, m.H.			TME 14min
	12					DRL 14min
			F-VEF.g, SLT 4.5-7.2		4	RAN 2.1
	13					REC 2.1
			PN w/cl coating 19.7, 45°			LOSS Ø
	14					UNACC Ø DCD 13.8
			ANg PN 15.7-16.3, ~.02 Thick		14.6	Pull #4
	15					START 10:25
			7.2. cl/sls 4.3-11.2, 12.3			END 10:30
	16					TIME 5min
			13.4 high NNg EXNC 13.6-		5	DRL 5min T/DP 15.7
	17					RAN 4.7 DCD 15.8
			19.8			REC 4.7 Pull #5
	18					LOSS Ø START 10:38
					18.3	UNACC Ø END 10:53
	19				6 (cont)	TIME 15min
						DRL 15min
	20		Cont			RAN 4.5
						REC 4.1
						LOSS .4 UNACC .4

PROJECT Gallipolis Lock + Dam   HOLE NO. R-63/2

PROJECT: 6ALLiPoLis LocK + DAM

INSTALLATION: O RH-CD

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLs/cLs/ss			SEP 20.2
	21				6	PULL #6
						START 11:02
479.2	22					END 11:16
					22.2	TIME 19min
	23		Icl			DRL 19min
			P. BR, S-m.H., sh, BKn			RAN 5.0
	24				7	REC 5.0
			Num sLK, occ MOTTLED			LOSS 0
	25					UNACC 0
			W/gR-gn-gRi, cL, dKgR			DEP +T/DCP 25.2
	26				25.5	PULL #7
			ABOvE 27.9, scufflY			START 11:55
	27				8	END 12:12
			BKn 29.3 - 25Z, 30.0 -			TIME 17min
	28		30.1			DRL 17min
	29					RAN 4.9
						REC 4.9
	30				29.3	LOSS 0
						UNACC 0 T/DCP 29.7
	31				9	DEP 30.1
						PULL #8
	32					START 12:20
463.9						END 12:40
	33		Bottom HoLE		32.8	TIME 20min
						DRL 20min T/DCP+ DEP 32.8
	34					RAN 2.7
	35					REC 2.7
	36					LOSS 0
	37					UNACC 0
	38					
	39					
	40					
	41					
	42					
	43					
	44					

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PROJECT 6ALLiPoLis LocK+ DAM   HOLE NO. P-63/2

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DIVISION	INSTALLATION	SHEET 1
OED	ORH-CD	OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

10. SIZE AND TYPE OF BIT 4 × 5½

2. LOCATION (Coordinates or Station) Mono R64 STA 2+13 A

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-6911

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 2/22/89 | COMPLETED 2/22/89

7. THICKNESS OF OVERBURDEN Ø 496.9

17. ELEVATION TOP OF HOLE 496.9

8. DEPTH DRILLED INTO ROCK 39.7

18. TOTAL CORE RECOVERY FOR BORING 39.9 %

9. TOTAL DEPTH OF HOLE 462.2

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SLS/CLS ks			PULL #1
	1		SLS, gr, S-M.H, occ			START 11:25
	2				1	END 11:40
			interbdd w/cls/ss			TIME 15 min
	3					DRL 15 min
			Bkn pn ~0.1 spacing			RAN 4.8
	4				3.7	REC 3.9
			(sh) 0.0-3.0, cls, gr,			Loss .9
	5					unacc .9
			S, Sh 0.9-1.1, 2.6-3.0,			DCP 4.9 T/DCP 4.8
	6				2	PULL #2
			R-BR, cl, 4.8-5.6 sa			START 12:30
	7					END 12:50
			7.9-9.9, 15.9-16.4 Bkn			TIME 20 min
	8				8.0	DRL 20 min
			7.9-9.9, 20.3-20.5			RAN 5.1
	9					REC 3.6
			Bkn pn ~0.7-0.3 spacing		3	Loss 1.5
	10					unacc 1.5 T/DCP 9.7
			below 5.6, high ang			DCP 9.9
	11					PULL #3
			FRAC Terminating @ Bd pn.			START 13:23
	12					END 13:39
			19.1-19.5, 19.7-15.0, cl			TIME 16 min
	13				13.0	DRL 16 min
			Below 18.5, 13.9-13.5,			PAN 4.8
	14				4	REC 4.8
			9.9-11.9, 6.8-7.4			Loss Ø
	15					unacc Ø
						DCP + T/DCP 19.7
	16				16.4	PULL #4
						START 13:52
	17					END 14:01
						TIME 9 min
	18				5	DRL 9 min
						RAN 5.0
	19					REC 5.0
						Loss Ø
	20		(CONT)		20.0	unacc Ø
						DCP + T/DCP 19.7
						PULL #5

PROJECT	HOLE NO.
Gallipolis Lock + Dam	R-6911

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DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE			496.9		**Hole No.**	R-6411

PROJECT	INSTALLATION	SHEET
Gallipolis Lock & Dam	ORH-CD	2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		sls fcls fss	20.0		Pull #5
	21					START 19:20
475.2						END 19:39
	22		ICL		6	TIME 19 min
	23					DRL 19 min
			R-BR, S-M.H, NUM SLL			RAN 5.0
	24					REC 5.0
			OCC ANG.PN, , GR. ABOVE	23.8		LOSS 0 UNACC 0
	25					Dep T/10EP 24.7
			24.7, LT.R-BR 24.7-28.5			Pull #6
	26				7	START 14:96
			R-BR BELOW 28.5			END 15:04
	27					TIME 18 min
			SEVERELY BKN 28.5-	27.2		DRL 18 min
	28					RAN 3.8 LOSS .3
			28.8, 29.3-29.5, 30.9-30.7			REC 3.5 UNACC .3
	29					DEP 28.7 T/10EP 28.5
			32.9-33.1, 33.9-34.9		8	Pull #7 T/10EP 29.3
	30					START 7.95 DEP 29.7
						END 7.55
	31			30.7		TIME 10 min
						DRL 10 min
	32					RAN 0.8
					9	REC 0.7
	33					LOSS 0.1
						UNACC 0.1
	34					Pull #8
462.5			Bottom Hole			START 8:10
	35					END 8:39 T/10EP 34.4
						DEP 34.7
	36					TIME 29 min
	37					DRL 29 min
						RAN 5.1
	38					REC 5.1
						LOSS 0
	39					UNACC 0
	40					
	41					
	42					
	43					
	44					

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PROJECT	HOLE NO.
Gallipolis Lock Dam	R-6411

DRILLING LOG	DIVISION OED	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono R-64 STA 2+45A

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-64/2

5. NAME OF DRILLER Dave Happel

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 496.9

8. DEPTH DRILLED INTO ROCK 33.5

9. TOTAL DEPTH OF HOLE 463.4

10. SIZE AND TYPE OF BIT 4" XS5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL 8-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/23/89 COMPLETED 2/23/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 33.5

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			CLS			PULL #1
	1		Shy, s.-m.h, m.-DK.gr		Box 1	START 12:10 / END 12:23 / TIME 13 min
494.7	2					DRL 13 min
	3		SANDSTONE / Shy. f.g., m.h, m.-gr		3.9	RAN — / REC 4.6 / LOSS Ø
	4					UNACC Ø T/DEP 4.6
491.8	5				Box 2	DEP 5.6
	6		CLS / Shy, s.-m.h, m.gr w/ Sin nod			PULL #2 / START 12:34 / END 12:48
489.7	7		SLS		7.5	TIME 12min LOSS Ø
488.8	8		Shy, sli, sa, s.-m.h., m.dk.gr.			DRL 12min UNACC Ø
			CLS			RAN — 1
	9		ve bkn (mech) w/hvy gr. / CL. con, crushed 8.1-		Box 3	REC 9.9 / DEP 9.6 T/DEP 9.5
	10		9.5, Shy s-m.h, core spin			PULL #3 / START 12:55
	11		@ 10.0 - Sli; irr, hor ptgs / w/occ sm.slk surface 10.4-		11.0	END 1:12 / TIME 17min UNACC Ø
	12		10.8 med spaced hor ptgs / 11.0-14.0; 0.3 sa lens @			DRL 17min / RAN —
	13		13.4-13.7; grading / into SLS		Box 4	REC 4.5 / LOSS Ø
482.9	14		SLS			DEP 14.0 T/DEP 13.9
	15		s.-m.h, m.-dk gr, grading / sa @ 14.6; Shy ss 15.0-15.4		14.5	PULL #4 / START 1:20
	16		large ss incls 15.5-16.0 / grading chy w/depth		Box 5	END 1:35 / TIME 15min
480.3			CLS			DRL 15min / RAN —
	17		Shy, s.-m.h, m.-dk.gr			REC 5.0
	18		occ Shy; sm slk on		19.2	LOSS Ø
	19		near hor ptgs 17.6-		Box 6	UNACC Ø
			19.0; sli indurated cls			T/DEPTDE 19.0
	20		(cont)		Cont	PULL #5 / START 1:43 / END 1:57 (CONT)

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PROJECT Gallipolis Lock & Dam   HOLE NO. R-64/2

ELEVATION TOP OF HOLE	Hole No. R-64/2
496.9	

PROJECT	INSTALLATION	SHEET 2
Gallipolis Lock & Dam	ORH-CD	OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	PULL #5
	21		R. br. w/few slk 19.8			TIME 14min
			-20.8			DEL 14min
	22				21.7	RAN —
						REC 4.0
474.1					Box 7	LOSS ⊘
						UNACC ⊘
	23		ICL			T/DEP 23.0
						DEP 23.5
	24		greenish gr - R. br, s-m. h			PULL #6
						START 2:09 RAN —
						END 2:17 REC 2.5
	25		SLK, S. bkn 22.8 -23.8			TIME 12min LOSS ⊘
					25.3	DEL 12min UNACC ⊘
	26		becoming R. br @ 25.0			DEP + T/DEP 25.5
						PULL #7
	27					START 2:25
					Box 8	END 2:40
	28					TIME 15min
						DEL 15min
	29				28.5	RAN —
						REC 5.0
	30					LOSS ⊘
					Box 9	UNACC ⊘
	31					DEP/T/DEP 30.5
						PULL #8
	32					START 2:50
						END 3:11 REC 3.0
	33				32.5	TIME 21min LOSS ⊘
463.9			Bottom Hole		Box 10	DEL 21min UNACC ⊘
	34				33.5	RAN —
						T/DEP 33.5
	35					DEP 33.0
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

PROJECT	HOLE NO.
Gallipolis Lock & Dam	R-64/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO R-65 STA 2+55A

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-65/1

5. NAME OF DRILLER Dave Harper

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.2

8. DEPTH DRILLED INTO ROCK -34.0

9. TOTAL DEPTH OF HOLE 463.2

10. SIZE AND TYPE OF BIT 4/SB"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/23/89 | COMPLETED 2/23/89

17. ELEVATION TOP OF HOLE 497.2

18. TOTAL CORE RECOVERY FOR BORING 33.5

19. SIGNATURE OF INSPECTOR JMO

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
497.2			CLS			Pull #1
	1		S.-m.h, shy, m.gr, o.1 Lc		Box 1	START 7:50
495.7			0.0 - 0.1			END 8:13
495.1	2		SS - shy, f.g, m.h, m.gr			TIME 23min
			CLS/SLS			DRL 23min
	3		Interbdd, s-m.h, shy, m.gr			RAN —
			Occ sa : sa 3.7-4.3			REC 4.8
	4				3.8	LOSS 0.1
492.3						UNACC 0.1
	5					DEP 5.0 T/DEP 4.9
			SS - shy, f.g, m.h, m.gr.		Box 2	Pull #2
491.2			Na Frac 5.1-5.7 : grading			START 8:18
	7		SLS/CLS		7.3	END 8:32
						TIME 14min
	8		Interbdd, shy, s.-m.h,			DRL 14min
						RAN —
	9		m.-dk.gr. 0.3 Lc btwn		Box 3	REC 3.9
						LOSS 0.3
	10		7.0 : 9.1 (mech) closely			UNACC 0.3 T/DEP 9.1
					10.9	DEP 10.0
	11		spaced (0.2) hor ptgs			Pull #3
						START 8:43
	12		9.1 - 13.5 w/0.2 L.C. 0.3			END 8:57 UNACC 0.2
	13		L.C btwn 13.9 : 14.6		Box 4	TIME 14min
						DRL 14min
	14					RAN —
482.6					14.2	REC 4.2
	15		SLS			LOSS 0.2 T/DEP 13.5
			S2, s.-m.h. m.gr			DEP 14.0
480.8	16		grading			Pull #4
			SLS			START 9:10
	17		ghy, s.-m.h., m.gr, pts		Box 5	END 9:30
			Shy 0.2 L.C. btwn 16.4 t			TIME 20min
	18		20.0			DRL 20min T/DEP 16.4
478.2					18.2	RAN —
					Box 6	REC 2.6
	19		CLS (cont)			LOSS 0.3
			Shy, s.-m.h, m.dk.gr			UNACC 0.3
	20					DEP 18.6
						Pull #5
						START 9:39 (cont)
						END 9:50
						TIME 11min DEP 20.0

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam   HOLE NO. R-65/1

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 497.2					Hole No. R-6511	
PROJECT Gallipolis Lock & Dam			INSTALLATION OCH-CD			SHEET 2 OF 2 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	20		CLS Occ. shy, Indurated cl, R.br w/sLk 20.5-21.3		Box 6	DRL 11min PULL#5 RAN - UNACC 0.2 REC 3.6 LOSS 0.2 DEP 21.4	
475.9	21						
	22		SLS Occ cly, s-m.h, shy, 0.3 L.C. btwn 20.0 & 24.2		21.8 Box 7	PULL#6 START 10:29 END 10:45 TIME 16min DRL 16min RAN - REC 4.8 T/DEP 24.2 LOSS Ø UNACC Ø DEP 25.0	
	23						
473.7							
	24		ICL R.bR, s-m.h, sLk				
	25				25.5	PULL#7 START 10:29 END 10:45 UNACC Ø TIME 16min DRL 16min RAN - REC 4.8 LOSS Ø T/DEP 29.0 DEP 29.2	
	26				Box 8		
	27						
	28						
	29				29.0		
	30				Box 9	PULL#8 START 11:05 END 11:23 TIME 18min DRL 18min RAN - REC 4.5 LOSS Ø UNACC Ø T/DEP 33.5 DEP 32.0	
	31						
	32				32.8 Box 9		
	33				33.5		
463.7			Bottom Hole				
	34						
	35						
	36						
	37						
	38						
	39						
	40						
	41						
	42						
	43						
	44						

ENG FORM 1836-A (ER 1110-1-1801) GPO 1980 OF - 628 - 603

PROJECT Gallipolis Lock & Dam   HOLE NO. R-6511

| DRILLING LOG | DIVISION ORD | | | | INSTALLATION ORH-CD | | | SHEET 1 OF 2 SHEETS |

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MORO R-65 STA 2+82A

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-65/2

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0   496.9

8. DEPTH DRILLED INTO ROCK 39.3

9. TOTAL DEPTH OF HOLE 462.6

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | STARTED 2/23/89 | COMPLETED 2/24/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 34.3 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SLS/CLS			Pull #1
	1		SLS, gr., S-M.H, sh, 0.9 2.0			Start 13:20
			2.6-3.0, 4.9-7.9, 9.8-12.8			End 13:30
	2		13.6-16.1, 17.0-20.3, 20.9		1	Time 10 min
			22.5, CLS gr. S. sh 2.0-			DRL 10 min
493.9	3		2.6, 7.9-9.8, 12.8-13.6 —			RAN 4.8
			SANDSTONE		3.6	REC 4.8
	4		gr, m.H V.E.F.g.			Loss 0
						Unacc 0
492.0	5					Dept/Dep 4.8
	6		SLS/CLS			Pull #2
			20.3-20.9 BKN pn 0.1 spac		2	Start 13:43
	7		Sh 0.0-2.0, sa/CLS 2.6-			End 13:57
					7.2	Time 14 min
	8		3.0, 13.6-16.1, 17.0-17.2			DRL 14 min
						RAN 5.0
	9		19.1-19.2, BKN 3.2-3.9			REC 4.7
					3	Loss 0.3
	10		7.9-8.3, 9.8-10.0, 12.9-13.2			Unacc 0.3
						Dept/Dep 9.8
	11		19.4-19.6, CL/SLS 4.9-7.9		11.0	Pull #3
						Start 14:08
	12		10.7-12.8, 17.7-19.1, 21.2			End 14:19
						Time 11 min
	13		BKN pn ~0.5 spacing			DRL 11 min
					4	RAN 9.9
	14		under 2.0' High Angle			REC 9.9
						Loss 0
	15		FRAC 19.1-19.7			Unacc 0
					19.7	Dep 19.8 T/Dep 19.7
480.9	16		(cont)			Pull #4
			SANDSTONE		5	Start 19:28
480.0	17		gr. m.H. V.E.F.g.			End 19:38
						Time 10 min
			SLS /CLS			DRL 10 min
	18					RAN 4.7
					18.3	REC 4.7 Unacc 0
	19				6	Loss 0 T/Dep 18.9
					cont	Dep 19.4
	20		cont			Pull #5 (cont)

| PROJECT Gallipolis Lock + Dam | HOLE NO. R-65/2 |

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 496.9		Hole No. R-65/2

PROJECT: GALLipolis LOCK+DAM

INSTALLATION: ORH-CD

SHEET 1 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLSKLS			Pull #5
	21				6	START
						END
	22				22.0	TIME
474.9						DRL
	23		ICL			RAN LOSS,
	24		R.BR, S-m.H. NUM		7	REC UNACC
	25		SLK, OCC MOTTLEG			Dep+T/Dep 24.0
					25.7	Pull #6
	26		dKgr. ABOUE 26.5			START 8:06
	27		SCUEREly BKN 254-29.4		8	END 8:25
	28					TIME 19min
			31.9-32.1, 33.0-33.3, 33.9-		28.6	DRL 19min
	29		34.3			RAN 5.0
						REC 5.0
						LOSS 0
						UNACC 0
						Dep 29.3
	30				9	T/Dep 29.4
						Pull #7
	31					START 9:11
	32				32.1	END 9:31
						TIME 20min
	33				10	DRL 20min
						RAN 4.9
						REC 4,9
462.6	34		Bottom HoLE		34.3	LOSS 0
	35					UNACC 0
						Dep+T/Dep 34.3
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO: 1960 OF—329-243

PROJECT GALLipolis LOCK+DAm

HOLE NO. R-65/2

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		HOLE NO. R-6611	SHEET / OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

10. SIZE AND TYPE OF BIT 4 X 5½

2. LOCATION (Coordinates or Station) MONO R-66 STA 2+92A

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-6611

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE

14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/23/89 COMPLETED 2/23/89

7. THICKNESS OF OVERBURDEN 496.9

17. ELEVATION TOP OF HOLE 496.9

8. DEPTH DRILLED INTO ROCK 34.3

18. TOTAL CORE RECOVERY FOR BORING 34.1

9. TOTAL DEPTH OF HOLE 462.6

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SLS/CLS/SS			PULL #1
	1		SLT. gr, S-M.H, sh			START 9:17
	2		occ interbdd w/cls/ss		1	END 9:25 / TIME 8min / DRL 8min
	3		cls. gr, s, sh 0.0-8.5			PAN 4.1
	4		2.6-3.1, 9.3-9.6 10.3-10.7		3.7	REC 4.1 / LOSS 0 DEP9.1
	5		12.5-13.2 SLT., BKN 2.6-2.7			UNACC 0 DEP4.7
	6		8.8-9.3, SS. gr, M.H,		2	PULL #2 / START 9:33 / END 9:44
	7		F-V.F.g., SLT, 3.5-9.3		7.2	TIME 11min / DRL 11min / PAN 5.1
	8		4.8-5.1 50/sls 4.3-4.8			REC 5.1
	9		CLAyey SLS ABove 13.2		3	LOSS 0 1 / UNACC 0 DEP9.2
	10		SS. gr M.H. V.E.F.gr		10.2	T/DEP 93 / PULL #3 / START 9:56
	11		13.2-15.2 CLS-R-gr			END 10:11 / TIME 15min / DRL 15min
	12		S. Sh 19.8-20.7		4	PAN 5.1 / REC 5.1 / LOSS 0
	13		occ clayey, sls below			UNACC 0
	14		18.5		19.3	T/DCD DEP 19.3
	15					PULL #4 / START 10:24
	16				5	END 10:37 / TIME 13min / DRL 13min
	17					PAN 4.9 / REC 4.9
	18				18.1	LOSS 0
	19				6 (cont)	UNACC 0 / DEP 19.3 T/DEP 19
	20		(cont)			PULL #5 / CONT

PROJECT GALLiPoLiS LocK+DAm   **INSTALLATION** ORHCP   SHEET 2   OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					
			SLs/cLs/ss		6	Pull #5
	21					START 10:49
						END 11:06
	22				26.6	TiME 17min
						DRL 17min
474.1						PAN 5.1
	23					REc 5.1
			IcL		7	Loss 0
	24					uNAcc 0 DeP 24.3
			R-BR, S-M.H, SL. Num			
	25					Pull #6 T/DeP24.9
			SLK cLayey occ mottLed		25.3	START 11:15
	26					END 11:40
			w/GR-GN.GR. dkgR			TiME 25min
	27				8	DeL 25min
			mottLed w/R-BR ABove			PAN 4.7
	28					REc 4.7
			22.5, securely Bkn		28.6	Loss 0
	29					uNAcc 0 T/DeP29.0
			23.9-24.3, 29.0-29.7, 31.5			DeP30.3
	30					Pull #7
			31.8, 33.3-33.9		9	START 12:17
	31					END 12:46
						TiME 29min
	32				32.1	DeL 29min
						PAN 5.1
	33				10	REc 5.1
						Loss 0
462.9	34		Bottom HoLE		34.1	uNAcc 0 T/DeP 34.1
						DeP 34.3
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67   GPO 1969 OF—329-243   **PROJECT** GALLipoLis LocK+DAm   **HOLE NO.** P-6611

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ELEVATION TOP OF HOLE 496.9					**Hole No.** R-66/2	
PROJECT GALLIPOLIS Lock+Dam			**INSTALLATION** ORH-CD			**SHEET** 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20				6	
479.9	21		CLS		20.7	PULL #5
	22		gr w/ occlt R-BR, S,SL		7	START 11:30
			SLT w/slk @ 22.0			END 11:90
						TIME 10min
473.9	23					DRL 10min
	24		ICL		24.1	RAN 4.3
						REC 9.0 UNACC 0.3
			R-BR, S·M·H, Sh, Num			LOSS 0.3
	25					DEP 29.3
			SLK, OCC Mottled w/			T/DEP 28.6
	26				8	PULL #6
			gR-gn gR SCUCRELy Btw			START 12:10
	27					END 12:20
			24.9-29.5 DKgR, ABov		27.8	TIME 10min
	28					DRL 10min
			29.6.			RAN 5.1
	29				9	REC 5.1
						LOSS 0
	30					UNACC 0
						DEP+T/DEP 29.7
	31				30.8	PULL #7
						START 12:50
	32					END 1:10
						TIME 20min
	33				10	DRL 20min
						RAN 9.9
	34					REC 9.5
461.8			Bottom Hole		34.6	LOSS 0
	35					UNACC 0
						T/DEP 39.6
	36					DEP 39.9
	37					
	38					
	39					
	90					
	91					
	92					
	93					
	94					

ENG FORM 1836-A
JUN 67
GPO 1969 OF-329-243
PROJECT GALLIPOLIS Lock+Dam
HOLE NO. R-66/2

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DRILLING LOG	DIVISION ORH	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MOND R-67 STA 3+40 A

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-67/1

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 6 496.6

8. DEPTH DRILLED INTO ROCK 32.6

9. TOTAL DEPTH OF HOLE 464.0

10. SIZE AND TYPE OF BIT 4 ¼ x 5½ "

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/28/89 COMPLETED 2/28/89

17. ELEVATION TOP OF HOLE 496.6

18. TOTAL CORE RECOVERY FOR BORING 32.6

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6			CLS/SLS			PULL #1
	1					START 3:00
						END 3:07
	2		INTERbdd, S. -M, h, SLty		Box 1	TIME 7min
						DRL 7min
	3		M-DK.gR SLS -0.0-0.3;			RAN -
					3.6	REC 4.7
	4		3.3-4.2 SM. h wod, START			LOSS 0
						UNACC 0 T/DEP 4.7
	5		@ 4.4, bKN wLsLK PLns		Box 2	DEP 5.3
	6		8.2-9.0 w/0.2 LC! 10.5			PULL #2
						START 3:12
	7		-10.8; R.bR 12.5-12.7		3.2	END 3:20
						TIME 8min
	8					DRL 8min
	9				Box 3	RAN -
						REC 4.1 T/DEP 9.0
	10					LOSS 0.2
					10.5	UNACC 0.2 DEP 10.7
	11					PULL #3
						START 7:00
	12				Box 4	END 7:10 REC 4.8
						TIME 10min LOSS 0
	13					DRL 10min UNACC 0
						RAN -
482.8	14				14.2	DEP+ T/DEP 13.8
			SLS			PULL #4
						START 7:30 DRL 12min
						END 7:42 RAN -
	15		S2, S. -m.h, m.gR.sa			TIME 12min REC 3.8
						DEP 18.3 LOSS 0
	16		ve. f. dcc sm. wod		Box 5	UNACC 0
	17		CLS -15.3-15.7			START 7:46 PULL #5
						END 8:00
	18				17.9	TIME 14min LOSS 0
478.0					Box 6	DRL 14min UNACC 0
	19		CLS			RAN -
			S-m.H, m-DK.gR ICL			REC 4.3 DEP 18.5
	20		19.0-19.8 (CONT)		(CONT)	T/DEP 18.0 PULL #6. (CONT)

PROJECT Gallipolis Lock & Dam   HOLE NO. R-67/1

PROJECT							
GALLIPOLIS LOCK & DAM				INSTALLATION O RH-CD			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6 20.4	PULL #6
	21				Box 7	START 7.46 END 8.00
4750						TIME 14min DRL 14min RAN — REC 4.3 LOSS 0 UNACC 0
	22		ICL			
	23		R. bR, S. - M.H. SLK			
	24				24.3	DEP + T/DEP 24.3
	25					PULL #7 START 8.15 END 8.40
	26				Box 8	TIME 25min DRL 25min RAN —
	27					REC 3.4 LOSS 0
	28				27.7	UNACC 0 T/DEP 27.7
	29				Box 9	
	30					
	31					DEP 30.3 PULL #8 START 9.00 END 9.30
					31.5	
	32				Box 10	TIME 30min DRL 30min RAN —
4640			Bottom HOLE		32.6	REC 4.9 T/DEP 32.6 LOSS 0
	33					UNACC 0 DEP 33.5
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67 (ER 1110-1-1801)   GPO 1980 OF -628-603

PROJECT	HOLE NO.
GALLIPOLIS LOCK & DAM	R-67/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO R-67 STA 3+75A

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-67/2

5. NAME OF DRILLER WAYNE TILE

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.1

8. DEPTH DRILLED INTO ROCK 34.8

9. TOTAL DEPTH OF HOLE 462.3

10. SIZE AND TYPE OF BIT 4 X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN NA | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/24/89 COMPLETED 2/24/89

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 34.8 %

19. SIGNATURE OF INSPECTOR YMU

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SLS/CLS LSS			PULL #1
	1		SLT. gR, S-m.H, Sh, 2.5-6.0			START 10:15
			2.6-2.9, CLS gR. S, Sh		1	END 10:27
	2		0.0-0.5, 2.0-2.6, 3.6-4.6			TIME 12 min
			SS. gR. m-H. Ve.F.g. 2.9			DRL 12 min
	3		-3.6 BKN 0.0-1.1, 0.1-0.2			RAN 4.9
			fern fossil @ 3.8 highang		3.8	REC 4.9
	4		FRAC 4.2-4.5			LOSS Ø
492.5						UNACC Ø
						DEP/T/DEP 4.9
	5		SANDSTONE			PULL #2
			gR, m.H, F-Ve.F.g, AMg,		2	START 10:38
490.8	6		PN w/cl coat, ng ~30° S/S.3			END 10:50
						TIME 12 min
	7		SLS		7.9	DRL 12 min
			gR. S-m.H. sh, occ			RAN 5.0
	8					REC 4.9
			interbdd CLS, BKN pN.		3	LOSS 0.1
	9					UNACC 0.1
			~0.3 spacing, cl 6.3-9.1			DEP+T/DEP 9.9
	10					PULL #3
			12.1-12.5 below 21.8		10.8	START 11:00
	11					END 11:11
			CLS gR. S, Sh 9.1-10.1			TIME 11 min
	12				4	DRL 11 min
			10.8-11.2, 12.5-13.5, 20.7			RAN 4.8
	13					REC 4.6
			21.8, 22.8-23.9, ANg FRK			LOSS 0.2
	14				14.3	UNACC 0.2
			~30° 10.6-14.8, P-AN.			DCD 14.9 T/DEP 14.7
	15					PULL #4
			fossil 12.7 BKN 9.9-10.1			START 12:05
	16				5	END 12:14
			15.9-16.1; 19.7-19.8 sa			TIME 9 min
	17					DRL 9 min
			15.1-15.9		17.8	RAN 5.0
	18				6 (cont)	REC 5.0
	19					LOSS Ø
						UNACC Ø
	20		(cont)			DCP 19.7 T/DEP 19.6
						PULL #5

ELEVATION TOP OF HOLE	497.1

PROJECT	Hole No. R-67/2
GALLIPOLIS LOCK + DAM	

INSTALLATION	SHEET 2
ORH-ED	OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS.		6	Pull #5
	21					START 12:29
	22				26.9	END 12:35
						Time 11min
	23				7	DRL 11min
						PAN 5.0
						REC 5.0
472.8	24					LOSS 0
	25		ICL		29.7	UNACC 0 Dep 29.7
						T/Dep 29.8
	26		R.-BR, S-M,H, NUM,		8	Pull #6
						START 12:47
	27		SLK, CLAYEY, OCC MOTTLED			END 13:11
						Time 24min
	28		W/GR-GN,GR, DKGR		28.2	DRL 24min
						PAN 5.1
	29		ABOVE 26.0, SEVERELY			REC 5.1
						Lars 0
	30		BKN 24.3-24.5; 24.7-24.8		9	UNACC 0
						Dep+T/Dep 29.8
	31		31.6 - 31.8; 33.1-33.7			Pull #7
						START 13:20
	32				31.8	END 13:41
						Time 21min
	33					DRL 21min
					10	PAN 5.0
	34					REC 4.7
						LOSS 0.3
462.3						UNACC 0.3
	35		BOTTOM HOLE		34.8	Dep+ T/Dep 34.8
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO 1969 OF—323-243

PROJECT	HOLE NO.
Gallipolis Lock + Dam	R-67/2

DRILLING LOG

DIVISION ORD	**INSTALLATION** ORH-CD	**SHEET 1 OF 2 SHEETS**

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO R-68 STA 3+85A

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-6811

5. NAME OF DRILLER DAVE HARPER

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.9

8. DEPTH DRILLED INTO ROCK 34.9

9. TOTAL DEPTH OF HOLE 463.0

10. SIZE AND TYPE OF BIT 4/5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/25/89 COMPLETED 2/27/89

17. ELEVATION TOP OF HOLE 497.9

18. TOTAL CORE RECOVERY FOR BORING 33.6 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.9			SLS/CLS			Pull #1
	1		9R, S-M.H, Sh, occ			START 12:52
			inter bdd w/cls +ss, bkn			END 1:07
	2		, 9 spacing, Bkn 0.0-0.8		1	TIME 15 min
			1.3-1.9, 2.7-2.9, 8.5-9.2			DRL 15 min
	3		10.3-11.2., 11.7-12.0 12.5-			RAN 9.8
			12.9 13.3-19.0 20.0 20.3			REC 9.8
993.3	4		Sa/cls 0.0-1.2, 3.6-9.1, 19.5-16.2		3.8	LOSS Ø
			SANDSTONE			UNACC Ø
	5		9R., m.H, F.9			DEP 5.0 T/DEP 9.8
						Pull #2
	6				2	START 1:13
						END 1:23
	7					TIME 10 min
489.9					7.3	DRL 10 min
	8		SLS/CLS			RAN 4.6
						REC 4.6
	9		CLAYSTONE, 9R, S, Sh,		3	LOSS Ø
						UNACC Ø ·, T/DEP 9.5
	10		2.9-2.9, 8.1-9.9, 13.0-19.1,			DEP 9.8
						Pull #3
	11		CL coating pn 7.6-20.0		10.8	START 1:33
						END 1:96
	12		CL/cls 7.6-8.1, 9.9-9.8			TIME 13 min
					9	DRL 13 min
	13		10.3-13.0, 16.3-18.9			RAN 9.8
						REC 9.8
	19		BKN pn ~0.2 spacing			LOSS Ø
					19.3	UNACC Ø T/DEP 19.3
	15		8.2-19.3, high ang FRAC			DEP 19.5
						Pull #9
	16		19.3-15.1, ANG FRAC 95°		5	START 1:55
						END 2:11
	17		17.5-17.8.			TIME 16 min
						DRL 16 min
	18				17.7	RAN 3.9 T/DEP 17.7
						REC 3.9
	19					LOSS Ø
					6	UNACC Ø DEP 19.1
	20		(CONT)		(CON'T)	Pull #5
						START 7:22
						END 7:42 (CON'T)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   (TRANSLUCENT)

PROJECT GALLIPOLIS LOCK + DAM   **HOLE NO.** R-6811

| PROJECT Gallipolis Lock + Dam | INSTALLATION ORH-CD | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS		6	PULL#5 TIME 70min DRL 20min
	21					PAN 9.5
					21.5	REC 9.2 LOSS 0.3
	22					UNACC 0.3 T/DEP 22.2
						DEP 22.7
479.0	23				7	PULL #6
	24		ICL			START 7:50 END 8:06
	25		R. BR S-M.H, SH		25.3	TIME 16min DRL 16min
	26		NUM SLL, BKN, OCC			PAN 9.7 REC 9.6 T/DEP 26.3
	27		MOTTLED W/GR, -9N, 9R		8	LOSS 0.1 UNACC DEP 27.2
	28		CLAYEY DKGR ABOVE			PULL #7 START 8:19
	29		26.8, SCURRELY BKN		28.8	END 8:31 TIME 17min
	30		25.3 - 25.8, 28.8 - 29.1, 31.5			DRL 17min PAN 3.9 T/DEP 30.2
	31		32.1		9	REC 3.7 UNACC 0.2 LOSS 0.2 DEP 31.3
	32				32.3	PULL #8 START 8:40
	33				10	END 8:57
963.8			BOTTOM HOLE		33.6	TIME 17min T/DEP 53.6 DRL 17min
	34					PAN 3.6 DEP 34.9
	35					REC 2.8
	36					LOSS .8 UNACC .8
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

| ENG FORM 1836-A JUN 67 | GPO: 1969 OF—329-242 | PROJECT Gallipolis Lock+Dam | HOLE NO. R-6811 |

DIVISION	INSTALLATION	SHEET 1
OED	ORH-CD	OF 2 SHEETS

1. PROJECT
GALLIPOLS LOCK + DAM

2. LOCATION (Coordinates or Station)
MONO P-6B STA 4+20A

3. DRILLING AGENCY
W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number)
P-68/2

5. NAME OF DRILLER
WAYNE TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.8

8. DEPTH DRILLED INTO ROCK 33.5

9. TOTAL DEPTH OF HOLE 463.3

10. SIZE AND TYPE OF BIT 4 V5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | STARTED 2/24/89 | COMPLETED 2/25/89

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 33.5 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			SLS /CLS			Pull #1
	1		GR. S-m.H. Sh, BKN			START 19:20
	2				1	END 19:30
			PNS. 0.4 SPACING, .			TIME 10 min
	3					DPL 10 min
			BKN pns 0.25 PACING 0.4			PAN 9.7
	4			3.9		REC 9.7
			-2.3, BKN 0.0-0.9, 8.3-			LOSS Ø
	5					UNACC Ø
			8.6, so/sls 0.8-1.2			DEP 4.8 T/DEP 9.2
	6				2	Pull #2
			CLS gr.S, sh 2.5-3.2			START 19:41
	7					END 19:50
			8.3-8.8, 9.7-10.0, 13.7-13.9	7.5		TIME 9 min
	8					DPL 9 min
			SS gR. m.H F-VEF,9.		3	PAN 5.0
	9					REC 5.0
			SLT 3.6-5.6, clayey SLS			LOSS Ø
	10			9.7		UNACC Ø
			6.6-7.9, 8.8-9.3, 10.5-11.1			DEP 9.8 T/DEP 9.7
	11				4	Pull #3
						START 7:30
	12					END 8:00
						TIME 30 min
	13					DPL 30 min
482.9	14			13.5		PAN 9.8
			SLS			REC 9.8
	15		gR, S-m.H, slightly sa		5	LOSS Ø
						UNACC Ø
	16		BKN PNS ~0.5 spacing			DEP 19.7 T/DEP 19.3
	17		sandy SLS: 15.2-15.4	16.6		Pull #4
						START 8:10
	18		clayey SLS 16.3-17.3, 19.6-19.8		6	END 8:25
						TIME 15 min
	19		CLS gR S, sh 21.6-22.2			DPL 15 min
	20		(cont)	(cont)		PAN 9.8
						REC 9.7
						LOSS 0.1
						UNACC 0.1
						DEP 19.6 T/DEP 19.3
						Pull #5

PROJECT	HOLE NO.
GALLIPOLIS LOCK + DAM	P-68/2

ELEVATION TOP OF HOLE 496.8

Hole No. R-68/2

PROJECT						
GALLIPOLIS Lock + DAM						

INSTALLATION ORH-CD

SHEET 1 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		20.1	PULL #5
	21					START 8:30
						END 8:50
479.6	22				7	Time 20 min
						DRL 20 min
	23		ICL			RAN 4.9
	24		R. BR, S - m.H, Sh, Num			REC 4.9 UNACC Ø
				23.9		LOSS Ø
	25		w/s LK, occ mottled w/		8	DEP 29.7 T/DEP 29.5
	26		GR - GN GR, dk GR ABove			PULL #6
					26.2	START 9:00
	27		25.0 SCurPLY BKN 27.5 -			END 9:30
	28		29.5, 27.5 - 29.5, 33.0 - 33.5			Time 30 min
					9	DRL 30 min
	29					RAN 5.6
	30					REC 5.6
						LOSS Ø
	31					UNACC Ø
				29.9		DEP 29.8 T/DEP 29.5
	32				10	PULL #7
						START 9:40
	33					END 10:12
463.3						Time 32 min
	34		Bottom Hole			DRL 32 min
				33.5		RAN 4.0
	35					REC 4.0 T/DEPt
	36					LOSS Ø DEP 33.5
	37					UNACC Ø
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO 1968 OF—325-242

PROJECT GALLipolis Lock + DAM

HOLE NO. R-68/2

DRILLING LOG

DIVISION	INSTALLATION	SHEET 1
ORD	ORH-CD	OF 2 SHEETS

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
Mono R-69   STA 4+30A

3. DRILLING AGENCY
W.G. Jacques

4. HOLE NO. (As shown on drawing title and file number)
R-69/1

5. NAME OF DRILLER
Dave Harper

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN   ∅   496.8

8. DEPTH DRILLED INTO ROCK   33.1

9. TOTAL DEPTH OF HOLE   463.7

10. SIZE AND TYPE OF BIT 4" x 5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL
B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 16

15. ELEVATION GROUND WATER   N/A

16. DATE HOLE | STARTED 2/25/89 | COMPLETED 2/25/89

17. ELEVATION TOP OF HOLE   496.8

18. TOTAL CORE RECOVERY FOR BORING 33.1

19. SIGNATURE OF INSPECTOR   JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
496.8			SLS			Pull #1
	1		S.-m.H, m.-dk.ge., shy bkn		Box 1	START 9:36
			w/ang slk. plns 2.2-2.6			END 9:55
	2					Time 4 min
494.0						DRL 19 min unacc∅
	3		CLS		3.5	RAN -
493.3			S.-mh, m-dk gr, shy			REC 4.8
	4		SANDSTONE			LOSS ∅
			Shy. F.9., m-h, m.gr. IRR, O.		Box 2	DEP 50 T/DEP 4.8
491.8	5		VERT JT. 3.5-4.2			Pull #2
			SLS LENS 4.2-4.3			START 10:04
			SLS			END 10:18
490.7	6		M.-gr, s-m.h, occ shy sli			Time 14 min
			sa 5.0-5.4		6.9	
	7		CLS			DRL 19 min unacc 0.3
			S.-m.h, m.-dk gr, shy			RAN -
	8				Box 3	REC 4.2
			w/ closely -m. spaced			LOSS 0.3 T/DEP 9.3
	9					
	10		hor. ptgs. bkn 8.7-9.0		10.3	DEP 9.8
						Pull #3
	11					START 10:28
					Box 4	END 10:39
	12					Time 11 min
484.3						DRL 11 min
	13		SLS			RAN -
			sa, m.dk gr, s-m.h.		13.5	REC 4.8
482.4	14		GRADING			LOSS ∅ T/DEP 13.5
	15		SLS/CLS		Box 5	UNACC ∅ DEP 14.3
			Interbdd, s.-m.h, m-dk.ge			Pull #4
	16		occ sa, pT3 b on, occ cL.			START 10:49
			0.2 LC btwn 13.5 & 17.4			END 11:00
479.9	17				17.2	Time 11 min Loss 0.8
	18		SLS		Box 6	DRL 11 min unacc 0.2
			sa, s-m.h., m.gr			RAN -
477.6	19					REC 4.8
			SLS/CLS			DEP + T/DEP 18.5
	20		Interbdd, s-m.h, m dk.gr (cont)	(cont)		Pull #5
						START 11:12
						END 11:28 (cont)

ENG FORM 1836
MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT	HOLE NO.
Gallipolis Lock & Dam	R-69/1

PROJECT GALLIPOLIS LOCK & DAM				INSTALLATION ORH-CD				SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d		% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOV	BOX/SAMPLE NO.	REMARKS
	20		SLS/CLS		Box 6	Pull #5
	21		Thin ICL LENS, btwn A.el, 20.6 w/0.2 L.C. (mech)		20.8	TIME 16 min
			GRADING			DRL 16 min
479.8	22				Box 7	RAN —
						REC 4.1
	23		ICL			LOSS 0.2
						UNACC 0.2 T/DEP 22.8
	23		GREENISH GR.-R.BR., S.mh.			DEP 23.5
	24					Pull #6
			SLK: GREENISH TO 29.5		24.5	START 11:36
	25					END 11:47
						TIME 11 min
	26		VE. bKW 29.5-26.3 w/a I		Box 8	DRL 11 min
						RAN — T/DEP 26.3
	27		L.C. 1.2 LC. btwn 26.3/			REC 3.9
						LOSS 0.1
	28		30.0		27.8	UNACC 0.1 DEP 27.8
						Pull #7
	29					START 12:00
						END 12:12
						TIME 12 min
	30				Box 9	DRL 12 min
						RAN — T/DEP 30.0
	31					REC 2.5
						LOSS 1.2
	32					UNACC 1.2 DEP 31.3
					32.4	Pull #8
					Box 10	START 12:24
463.7	33		Bottom Hole		33.1	END 12:35 T/DEP 33.1
						TIME 11 min
						DRL 11 min
	34					DEP 33.8 RAN —
						REC 3.1
	35					LOSS 0
						UNACC 0
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67	(ER 1110-1-1801)	GPO 1990 OF-628-503	PROJECT GALLIPOLIS LOCK & DAM	HOLE NO. R-69/1

DRILLING LOG

DIVISION	INSTALLATION		
ORD	ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MRN° R-69 STA 4+65A

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-69/2

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.6

8. DEPTH DRILLED INTO ROCK 33.7

9. TOTAL DEPTH OF HOLE 463.9

10. SIZE AND TYPE OF BIT 4" / 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN N/A — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/25/89 COMPLETED 2/25/89

17. ELEVATION TOP OF HOLE 497.6

18. TOTAL CORE RECOVERY FOR BORING 33.7

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.6			CLS			Pull #1
	1				Box 1	START 10:25 END 10:40
	2		S.-m.h, m-dk.gr, shy			TIME 15 min DRL 15 min
	3		0.1 LC 0.0-0.1; sa. lens			RAN — REC 4.1
	4		0.7-1.4' BKN (mech) 4.2-		3.8	LOSS 0.1 UNACC 0.1 DEP 4.4 T/DEP 4.2
	5		4.6; SLS w/some calc		Box 2	Pull #2 START 10:50
	6		vod. 4.6-5.4: ve bkn			END 11:00 TIME 10 min
	7		6.4-6.9: ve bkn 8.4-9.1		7.2	DRL 10 min RAN —
	8		: SLi sa. SLS 9.4-9.9		Box 3	REC 5.2 LOSS 0.1
	9		? 10.7-11.3 sm (std)			UNACC 0 DEP 9.9 T/DEP 9.2
	10		inch's 11.3-11.7		10.7	Pull #3 START 11:10 END 11:20 TIME 10 min
	11					DRL 10 min RAN —
	12				Box 4	REC 4.8 LOSS 0
	13					UNACC 0
483.9						
483.9	14		SLS, SLi, sa, S.-m.h, m.gr.		14.2	T/DEP+DEP 14.2
	15		CLS/SLS Interbdd, s.-m.h, m.dk.gr.			Pull #4 START 11:30
	16		PTs. shy: SLK 14.2-14.3		Box 5	END 11:40 TIME 10 min
480.4	17					DRL 10 min RAN —
			SLS		17.7	REC 5.1
	18		SLi, SA, S.-m.h, m.gr. bkn		Box 6	LOSS 0
478.5	19		ha JT. 17.7-18.2 & 18.7-19.1			UNACC 0 DEP 18.9
			CLS			T/DEP 19.3
	20		(Cont)	(Cont)		Pull #5 (Cont)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam

HOLE NO. R-69/2

PROJECT Gallipolis Lock + Dam				INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOV.	BOX OR SAMPLE NO.	REMARKS
	20		CLS		Box 6	Pull #5
	21		S.-m.h., m-gr. Elongated		20.8	START 11:50
			Rod started @ 21.0			END 12:10
475.2	22				Box 7	TIME 20min
						DRL 20min
	23		ICL			RAN — UNACC'D
			Greenish gr.-r.br.,			REC 5.0
	24		s.-m.h. slk ve bkn			LOSS 0
			22.3-24.3 greenish		29.3	DEP 29.2
	25		gr to 25.0, 0.5 Lc.			T/DEP 29.3
			btwn 29.3 & 29.3.			Pull #6
	26				Box 8	START 12:20
						END 12:40
	27					TIME 20min
						DRL 20min
	28					RAN —
					27.5	REC 5.0
	29					LOSS 0
					Box 9	UNACC'D
	30					T/DEP 29.3 DEP 29.4
						Pull #7
	31					START 12:50
						END 1:20
	32				31.5	TIME 30min
						DRL 30min
	33				Box 10	RAN —
						REC 5.0
463.9			Bottom Hole			LOSS 0
	34				33.7	UNACC'D
	35					DEP 34.9 T/DEP 34.3
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JAN 67 (ER 1110-1-1801) GPO 1966 OF - 628 - 003 | PROJECT Gallipolis Lock, Dam | HOLE NO. R-69/2

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT GALLipolis Lock + DAM	10. SIZE AND TYPE OF BIT 4 ½ 5 ½
2. LOCATION (Coordinates or Station) MONO R-70 STA 4+75A	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W.G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-70/1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER DAVE HARPER	14. TOTAL NUMBER CORE BOXES 11
6. DIRECTION OF HOLE ☑VERTICAL ☐INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A

	16. DATE HOLE	STARTED 2/24/89	COMPLETED 2/25/89

7. THICKNESS OF OVERBURDEN @ 497.5	17. ELEVATION TOP OF HOLE 497.5
8. DEPTH DRILLED INTO ROCK 40.8	18. TOTAL CORE RECOVERY FOR BORING 39.7
9. TOTAL DEPTH OF HOLE 456.7	19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.5			SLS /cLS			Pull #1
	1					START 12:50
	2		SLS., gR, S-m, H, Sh		1	END 1:03
						TIME 13 min
			0.0-2.3, 3.5-6.5, 7.0-7.7, 8.2			DRL 13 min
	3					RAN 4.4
	4		11.7, cLS gR, S, Sh 2.3-3.5	38		REC 3.9
						LOSS 0.5
	5		6.5-7.0, 7.7-8.2, 11.7-12.3			UNACC 0.5 T/DEP4.9
						DEP5.0
	6		Thin bd 0.1 to 0.3, BKN 0.0-0.3		2	Pull #2
						START 1:10
	7		8.0-2.3, 6.5-7.0 BKN DN			END 1:25
	8		~ 0.1 SPACing w/ clAy	7.6		TIME 15 min
						DRL 15 min
	9		coating 5.3-7.0, 11.7-12.3		3	RAN 5.0
						REC 5.0
	10		CL /SLS 5.3-6.5, 6.9-7.7, 9.9			LOSS ⌀ UNACC ⌀
						DEP+T/DEP 9.9
	11		10.7 (a)SLS 8.8, -9.3	11.2		Pull #3
						START 1:31
485.7	12				4	END 1:50
						TIME 9 min
	13		SLS			DRL 19 min
			gR. S-m, H, BKN DNS,			RAN 5.0
	14					REC 4.8
			~0.6 SPACing, SG 13.0-17.0			LOSS 0.2
	15			19.6		UNACC 0.2
			18.9-19.1 CL 17.6-17.8			DEP+T/DEP 19.9
	16				5	Pull #4
			cLS, gR, S, SH 19.8-20.3			START 1:58
	17					END 2:10
			22.0-22.5 BKN 21.4-22.0			TIME 12 min
	18					DRL 12 min
						RAN 4.3
	19			18.3		REC 4.7
					6	LOSS 0.1
	20		(CONT)	(CONT)		UNACC 0.1 T/DEP 8.7
						DEP 8.4
						Pull #5 (CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT GALLipolis Lock + DAM	HOLE NO. R-70/1

| PROJECT GAllipolis Lock + DAm | INSTALLATION OBH-CD | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		6	Pull #5 START 2:18 END 2:34 TIME 16 min
	21					
	22				21.9	DRL 16 min RAN 5.0 LOSS Ø
474.8						REC 5.0 UNACC Ø
	23		ICL		7	DEPT/DEP 23.7 Pull #6
	24		R-BR, S-M.H., NUM			START 2:42 END 2:55
	25		SLK Throughout, occ mottled		25.5	TIME 13 min
	26		w/gR-gN.gR, clAying			DRL 13 min
	27		dk, gR, ABove 23.7		8	RAN 3.9 REC 3.7
	28		Squarely Btn 22.1-22.5			LOSS 0.2 UNACC 0.2
	29		33.3-33.6, 35.1-36.0		29.2	DEP 28.7 T/DEP 27.6 Pull #7
	30		38.8-39.2 SLT, 77.6-78.3			START 8:00 END 8:25 TIME 25 min
	31		30.0-32.0			DRL 25 min LOSS 0.6
	32				9	RAN 4.4 UNACC 0.6 REC 3.8 T/DEP 32.0
	33				32.6	DEP 32.6 Pull #8 START 8:33
	34					END 8:51 TIME 18 min
	35				10	DRL 18 min UNACC 0.4 RAN 9.0
	36					REC 3.6 T/DEP 36.0 LOSS 0.4
	37				37.5	DEP 37.0 Pull #9
	38				11	START 9:04 END 9:20 TIME 16 min
	39				39.7	DRL 16 min T/DEP 38.7
452.8			Bottom HOLE			RAN 3.7 UNACC Ø REC 3.7
	40					LOSS Ø DEP 40.8
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION OCD			INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO R-70 STA 5+12A

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-70/2

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 497.9

8. DEPTH DRILLED INTO ROCK 39.9

9. TOTAL DEPTH OF HOLE 458.0

10. SIZE AND TYPE OF BIT 4YSV₂

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 12

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/25/89 COMPLETED 2/27/89

17. ELEVATION TOP OF HOLE 497.9

18. TOTAL CORE RECOVERY FOR BORING 39.6 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.9			SLS/CLS/SS			
	1		SLT, gr, S-M.H, Sh, occ			PULL #1
						START 1:30
	2		Interbedd w/cls/ss		1	END 1:43
						TIME 13 min
	3		BKN pns w/.4 spacing			DRL 13 min
					3.5	PAN 4.7
	4		BKN pns ~.05-0.1			REC 4.7
						LOSS Ø
	5		Sh, 0.0-3.5, 6.5-7.1			UNACC Ø DCP 9.6
					2	T/DCP 9.7
	6		CLS, gr, S, Sh, 2.6-31			PULL #2
						START 1:50
	7		7.8-9.3, 19.7-20.9, 541		7.1	END 2:01
						TIME 11 min
	8		SLS 3.5-7.9, 13.3-19.3		3	DRL 11 min
						PAN 4.9
	9		19.9-19.7, 18.5-18.7, CL BIT			REC Ø
					9.6	LOSS Ø UNACC
	10		5.0-6.5, 7.3-7.8, 10.2-			DCP 9.4 T/DCP 9.3
						PULL #3
	11		13.3, 15.0-18.5, 18.8-		4	START 7:15
						END 7:30
	12		19.7, BKN 8.8-9.3, ANg			TIME 15 min
						DRL 15 min
	13		pn ~95° w/cly coating		13.3	PAN 4.8
						REC 4.8
	14		13.8-19.2			LOSS Ø
					5	UNACC Ø
	15					DCP 19.9 T/DCP 19.2
						PULL #4
	16				16.5	START 7:40
						END 8:00
	17					TIME 20 min
						DRL 20 min
	18				6	PAN 5.0
						REC 5.0
	19					LOSS Ø
						UNACC Ø
	20		(CONT)		19.9	DCP 19.5 T/DCP 19.4

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

(TRANSLUCENT)

PROJECT Gallipolis Lock + Dam   **HOLE NO.** R-70/2

| | | | | | | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS/SS			PULL#5
	21					START 8:10
					7	END 8:20
475.6	22					TIME 10min
						DEL 10min
	23		ICL			RAN 5.1
	24		P-BR, S-m.H, Sh,	23.7		REC 5.1
						LOSS 0
	25		BKN, num slk.			UNACC 0 T/DEP29.2 DEP 29.5
	26		occ mottled w/gr.-		8	PULL#6
						START 8:30
	27		sngr. clayey, d/gr.	26.9		END 8:50
	28		Above 25.5, severely			TIME 20min
						DEL 20min
	29		BKN 22.3-22.9, 23.7-29.5		9	RAN 5.1
						REC 5.1
	30		29.6-20.9, 30.6-39.2			LOSS 0
						UNACC 0
	31			30.6		DEP 29.5
						PULL#7 T/DEP29.6
	32					START 9:00
						END 9:20
	33				10	TIME 20min
						DEL 20min
	34					RAN 5.0
						REC 5.0
	35			39.2		LOSS 0
						UNACC 0
	36				11	T/DEP39.6
						DEP 35.0
	37					PULL#8
				37.2		START 9:30
	38					END 9:40
						TIME 10min
	39				12	DEL 10min
						RAN 5.3
458.0	40		Bottom Hole	39.6		REC 5.3
						LOSS 0
	41					UNACC 0 DEP 39.7
						T/DEP 39.7
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO: 1969 OF—329-243

DRILLING LOG	DIVISION OPD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) Mono R-71 STA 5+22A

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-7111

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.8

8. DEPTH DRILLED INTO ROCK 38.8

9. TOTAL DEPTH OF HOLE 458.0

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9/6/89 COMPLETED 9/6/89

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 38.8

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			SLS/CLS			PULL #1
	1		SLS gr, S, m.H, Sh,			START 8:10
	2		OCC SR, BKN PNS-0.3		1	END 8:30 / TIME 20min / DRL 20min / RAN 4.9
	3		SPACING, CLS gr, S, Sh		3.7	REC 4.0
	4		BKN PN ~0.1 SPAING, SLS			LOSS 0.9 / UNRCL 0.5
	5		0.0-1.3, 2.0-5.5, 6.3-6.9			DEP 5.0 T/DEP 4.9
	6		7.1-7.9, 8.2-9.7, 10.0-		2	PULL #2 / START 8:45 / END 9:07
	7		10.5, 12.3-16.6, 17.1-17.7		7.0	TIME 22min / DRL 22min
	8		CLS 1.3-2.0, 5.5-6.3, 6.9-			RAN 4.8 / REC 4.6
	9		7.1, BKN PNS .05 SPACE		3	LOSS 0.2 / UNRCL 0.2 T/DEP 9.7
	10		0.0-1.3, BKN 1.3-1.7, 5.0-			DEP 10.2
	11		5.2, 8.8-8.9, 11.5-11.6, 13.4		12.0	PULL #3 / START 9:29
	12		-13.6, 18.9-19.3, SO L/S			END 9.42 / TIME 18min / DRL 18min
	13		2.0-3.6, 9.0-9.3, 13.0-14.0		4	RAN 4.6 / REC 4.6
	14		High HNS FRAC -13.3-14.5			LOSS Ø T/DEP 14.3
	15				13.6	UNRCL Ø DEP 15.1
	16					PULL #4 / START 10:03
	17				5	END 10:15 T/DEP 16.8 / DEP 16.9 / TIME 12min / DRL 12min
	18					RAN 2.6 / REC 2.6
	19				19.2	LOSS Ø / UNRCL Ø
477.1	20		CLS		6 (cont)	PULL #5 / START 10:30 / END 10.48 / TIME 18min / DRL 18min / RAN 4.2 / REC 4.2

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   (TRANSLUCENT)

PROJECT GALLIPOLIS LOCK + DAM   HOLE NO. R-7111

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE	496.8			**Hole No.**	R-71/1	
PROJECT GALLiPOLiS LocK + DAm		**INSTALLATION** OPH-CD			**SHEET** 2 OF 2 SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					POLL#5
	21		CLS			LOSS Ø
			gR, S, Sh, BKN, gRATes		6	GNACC Ø T/DEP 21.1
	22		into ICi @ bottom			PULL#6
						START 11.'05
	23		SeveRely BKN : 22.6 -		22.9	END 11:16
						TIME 11min
	24		23.3, 29.0 - 25.4			DRL 11min
						RAN 4.3
	25				7	REC 4.3
						LOSS Ø UNACC Ø
470.8	26					DCP 25.5 T/DCP 25.9
			ICL			PULL#7
	27				26.6	START 12:26
			R-BR w/occ mottled			END 12:40
	28					TIME 14min
			w/gR-gN,gR, Sh,			DRL 14min
	29				8	RAN 4.2
			BKN, num SLK,			REC 3.5
	30					LOSS 0.7
			SeveRely BKN 32.0 - 32.7		30.6	UNACC 0.7 T/DEP 29.6
	31					DEP 30.1
			39.0 - 39.6			PULL #8
	32					START 12:53
					9	END 1:09
	33					TIME 16min
						DRL 16min
	34					RAN 5.0
						REC 5.0
	35				39.4	LOSS Ø
						UNACC Ø T/DEP 34.6
	36					DEP 34.9
						PULL #9
	37				10	START 1:15
						END 1:37
	38					TIME 22min
						DRL 22min
258.0					38.1 / 11	RAN 4.2
	39		BOTTOM HOLE		38.8	REC 4.2
	40					LOSS Ø GNACC Ø
	41					DEP + T/DEP 38.8
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO R-71 STA 5+62

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) R-71/2

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.1

8. DEPTH DRILLED INTO ROCK 39.6

9. TOTAL DEPTH OF HOLE 457.5

10. SIZE AND TYPE OF BIT 4 YSY₂

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9/7/89 COMPLETED 9/7/89

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 39.6

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SLS/CLS			Pull #1
	1					START 10:56
			SLS w/occ interbd			END 11:10
	2				1	TIME 19min
			CLS, SLS. gR. S-M.H., Sh			DRL 19min
	3					RAN 4.9
			occ Sh, Bkn pns ~.3		3.8	REC 4.9
	4					Loss Ø
			CLS, gR, S, Sh Bkn			UNACC Ø T/DP 4.9
	5					DCP 4.9
			PNS ~ 0.3, SLS 0.0-4.6		2	START 11:18 Pull #2
	6					END 11:25
			6.2-7.5, 8.2-9.7, 10.4-10.8			TIME 7min
	7				7.3	DRL 7min RAN 3.8
			11.3-11.7, 12.1-16.7, 16.9-			REC 4.5
	8					Loss Ø
			18.2, 19.0-20.5, CLS 4.6			UNACC Ø T/DP 8.4 DCP 8.7
	9				3	Pull #3
			-6.2, 7.5-8.2, 9.7-10.4			START 12:14
	10					END 12:28
			10.8-11.3, 11.7-12.1, 16.7-		10.8	TIME 14min
	11					DRL 14min
			16.9, 18.2-19.0			RAN 5.1
	12				4	REC 4.8
			Bkn 0.7-0.9, 2.3-9.3, 11.7			Loss Ø
	13					UNACC Ø
			-12.1, Bkn pns ~0.15pncs			DCP 13.8 T/DP 13.7
	14				14.2	Pull #4
			0.0-4.4 SQ /SLS 8.8-8.9			START 12:37
	15				5	END 12:51
			12.1-12.6, 13.0-15.9, 17.0-17.4			TIME 19min
	16					DRL 19min
			SS. gR UE.F.S. M.H			RAN 4.5
	17					REC 4.5
			12.6-13.0		12.8	Loss Ø UNACC Ø
	18					DCP 18.3 T/DP 18.2
					6 cont	Pull #5
	19					START 1:00
						END 1:13
	20			(CONT)			TIME 13min

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

(TRANSLUCENT)

PROJECT GALLIPOLIS LOCK + DAM	HOLE NO. R-71/2

PROJECT						
GALLiPOLiS LOCK + DAM			INSTALLATION **ORH-CD**			SHEET **2** OF **L** SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.6	20		SLS/CLS			
	21		CLS -		6	Pull #5
			GR, S, sh SLT @ Top			DRL 13min
	22		GRADES into R-Br ICL		21.9	RAN 4.6
			@ Bottom occ SLK Below			REC 4.7
474.1	23		22.1		7	LOSS Ø UNACC Ø
						DCP + T/DCP 22.9
			ICL			Pull #6
	24		R-BR, S, sh, NUMSLK			START 1:23
						END 1:37
	25					TIME 19min
			BKN occ mottled w/		25.1	DRL 19min
	26					RAN 3.3 UNACC Ø
			GR. SCUERELY BROKEN.			REC 3.8
	27				8	LOSS Ø T/DCP 26.2
			28.5-28.7, 30.8-32.1			DCP 26.7
	28					Pull #7
			39.0-39.6			START 1:45
	29					END 2:05
					28.7	TIME 20min
	30					DRL 20min
						RAN 5.4
	31				9	REC 4.7
						LOSS 0.7
	32					UNACC 0.7
	33					DEP 32.2 T/DCP 32.1
					32.9	Pull #8
	34					START 2:20
						END 2:28
	35					TIME 8min
						DRL 8min
	36				10	PAN 2.5
						REC 2.0 DCP 39.5
	37					LOSS .5 T/DCP 39.6
					36.6	UNACC .5
	38					Pull #9
						START 2:35
	39					END 2:50
457.5						TIME 15min
	40				11	DRL 15min
						PAN 5.0
	41					REC 5.0 UNACC Ø
					39.6	LOSS Ø
	42					DCP / T/DCP 39.6
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO: 1969 OF—329-245

DIVISION	INSTALLATION	SHEET /
ORD	ORH-CD	OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

10. SIZE AND TYPE OF BIT 4 X 5½

2. LOCATION (Coordinates or Station) MONO R-72 STA 5+72 A

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) R-72/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — **DISTURBED** N/A — **UNDISTURBED** N/A

5. NAME OF DRILLER STEVE FRYE

14. TOTAL NUMBER CORE BOXES 9

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE — **STARTED** 4/6/89 — **COMPLETED** 4/7/89

7. THICKNESS OF OVERBURDEN Ø 497.9

17. ELEVATION TOP OF HOLE 497.9

8. DEPTH DRILLED INTO ROCK 36.0

18. TOTAL CORE RECOVERY FOR BORING 33.9

9. TOTAL DEPTH OF HOLE 461.9

19. SIGNATURE OF INSPECTOR JMP

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.9			SLS/CLS			PULL #1
	1		SLS, GR. S-M.H, SH			START 2:12
	2		OCC SQ BKN PNS		1	END 2:30 TIME 18 min DRL 18 min RAN 5.1 REC 3.5
	3		~0.3 SPACING, CLS GR, S,			
	4		SH, SLS 0.8-2.6, 2.9-7.6		9.2	LOSS 0.7 T/DCP 9.2 UNACC 0.7
	5		7.9-8.2, 9.1-12.9, 12.7-19.7		2	DCP 5.1 PULL #2 START 7:17
	6		20.1-20.3, 20.6-21.1, CLS			END 7:35
	7		0.2-0.8, 2.6-29, 7.6-7.9			TIME 18 min DRL 18 min
	8		8.2-9.1-12.9-12.7, 19.7		8.0	RAN 4.1 LOSS Ø REC 4.9 UNACC Ø
	9		20.1,-20.3-20.6, BKN ~		3	DEP 9.2 T/DCP 9.1 PULL #3
	10		0.1 SPACING 0.0-, SS.			START 7.46 END 8:03
	11		LT. GR., M-C.G., M.H		11.6	TIME 17 min DRL 17 min LOSS Ø
	12		BKN 0.0-0.2, BKN			RAN 9.7 UNACC Ø REC 4.8
	13		0.5-0.8, 22-2.5, 2.9-3.1		4	DCP + T/DCP 13.9 PULL #4 START 8:11
	14		5.0-5.1 5.9-5.8, 8.8-9.1			END 8:26 TIME 15 min DRL 15 min
	15		11.9-11.6 SO/SLS 9.1-9.5		13.0	RAN 1.8 REC 1.6
	16		9.1-9.5, 13.1-13.5, 14.3-			LOSS Ø T/DCP 15.3 UNACC Ø DCP 15.9
	17		15.0, 16.0-16.5, 19.0-19.1		5	PULL #5 START 8:39
	18		CL/SLS 5.1-7.6, 11.6-11.9			END 8:43 TIME 4 min DRL 4 min PAN 3.7 UNACC 0.1
	19		SS, GR-LT GR, F.G, M.H,		18.7 6 (cont)	REC 3.8 LOSS 0.1 T/DCP + DEP 19.9 PULL #6
	20					

PROJECT GALLIPOLIS LOCK + DAM **HOLE NO.** R-72/1

	ELEVATION TOP OF HOLE							

DRILLING LOG (Cont Sheet) — ELEVATION TOP OF HOLE **497.9** — Hole No. **R-72/1**

PROJECT: Gallipolis Lock + Dam
INSTALLATION: ORH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS. GRADATIONAL @ TOP + BOTTOM			Pull #6
976.9	21		W/SLS (B.S. 19.3)		6	START 8:52
						END 9:08
	22		CLS		22.2	TIME 16 min
			gr, S, Sh, BKN, occ SLKD			DRL 16 min
	23		BOTTOM, GRADATIONAL			RAN 4.9
			W/ R-BR, ICL, BOTTOM			REC 5.0 UNACCD
	24		AND SLS @ TOP BKPNS,		7	LOSS 0
			~0.2, SEVERELY BKN			DEP 29.3
972.7	25		22.2-22.5, 23.2-29.0			T/DCP 29.9
	26		ICL		25.9	Pull #7
			R-BR, S, Sh, NUM SLK			START 9:33
	27					END 9:96
			BKN occ MOTTLED W/GR-		8	TIME 13 min
	28					DRL 13 min
			GN, GR, SEVERELY BKN			RAN 5.9
	29					REC 5.0
			26.0-26.2, 27.7-28.0		29.1	LOSS 0
	30		29.1-29.9			UNACC 0
						T/DCP 29.9
	31					DCP 29.9
					9	Pull #8
	32					START 10.20
						END 10.35
	33					TIME 15 min
						DRL 15 min
463.3	34		BOTTOM HOLE			RAN 6.3
					33.9	REC 3.1
	35					LOSS 1.9 T/DCP 33.9
	36					UN ACC 1.9
	37					DCP 36.0
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO: 1969 OF—329-245

PROJECT: Gallipolis Lock + Dam   HOLE NO. R-72/1

DIVISION	INSTALLATION		SHEET 1
ORD	ORH-CD		OF 2 SHEETS

1. PROJECT
GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station)
MONO R-72/2 STA 5+62A

3. DRILLING AGENCY
W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number)
R-72/2

5. NAME OF DRILLER
STEVE FRYE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.6

8. DEPTH DRILLED INTO ROCK 34.1

9. TOTAL DEPTH OF HOLE 463.5

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE — STARTED 9/8/87 — COMPLETED 9/8/87

17. ELEVATION TOP OF HOLE 497.6

18. TOTAL CORE RECOVERY FOR BORING 33.6

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.6			SLS/CLS			PULL #1
	1					START 7:28
	2		INterbdd, SLS gr.,			END 7:40
						TIME 12 min
			S. M. H, Sh, occ SG		1	DRL 12 min
	3					PAN 5.0
	4		BKN PNS ~0.3 SPACE		3.7	REC 3.7
						LOSS 0.9
			CLS, gr, S, Sh, BKN PNS			UNACC 0.9 T/DCP 4.6
	5					DCP 5.0
			.2 SPACE SLS 0.0-2.6			
	6					PULL #2
			3.0-8.2, 9.0-10.0, 10.5		2	START 7:48
	7					END 7:56
			19.3, 20.2-20.9 CLS			TIME 8 min
	8				8.0	DRL 8 min
			2.6-3.0, 8.2-9.0, 10.0-10.5			PAN 4.9
	9					REC 5.0
			19.3-20.2, BKN 0.1-.8			LOOS 0
	^					UNACC 0 T/DCP 9.6
			2.4-2.6, 8.0-8.2, 12.1-12.6		3	DCP 9.9
	11					PULL #3
			19.3-19.7 BKN PNS ~.1			START 8:08
	12					END 8:21
			or less spacing: 0.0-2.6		12.5	TIME 13 min T/DCP 11.9
	13					DRL 13 min
			Sa /SLS 3.0-3.7, 9.1-9.6			PAN 4.9
	14					REC 2.1
			12.6-13.2, CL/SLS 2.6-8.2		4	LOSS 0.2
	15				15.1	UNACC 0.2
			10.5-11.1 18.8-19.3, CL			DCP 12.8
	16					PULL #9 DCP 14.9
						START 8:30
			SeaTED Bd PNS ~.2 SPACE			END 8:36
	17				5	TIME 6 min
			16.2-18.9			DRL 6 min
	18					PAN 0.1
						REC 2.9
						LOSS 0.2
						UNACC 0.2
						PULL #5
						START 8:42
						END 8:53
	19				19.0	TIME 11 min DCP 18.5
						DRL 11 min
						PAN 3.6
	20		(CONT)		6	REC 2.8
						LOSS 0.5 UNACC 0.5

PROJECT
GALLIPOLIS LOCK + DAM

HOLE NO.
R-72/2

				ELEVATION TOP OF HOLE 497.6			Hole No. R-72/2	

DRILLING LOG (Cont Sheet)

PROJECT: GALLiPOLiS Lock+DAM   INSTALLATION: ORH-CD   SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS			
476.7	21				6	PULL #6 / STARt 5:06 / END 5:12 / TIME 6min / DRL 6min
	22		CLS / SR, S, Sh, GRADATIONAL / w/ SLS @ Top + ICL			RAN 13.9 / REC 9.3
	23		@ Bottom SLK @ Bottom		22.6	LOSS 0 / UNACC 0 T/DEP 22.5
	24					DEP 23.9 / PULL #7 / STARt 9:20 / END 9:56
472.3	25				7	TIME 36min / DRL 36min DEP 25.0 / RAN 2.0 T/DEP 25.1
	26		ICL			REC 2.0 / LOSS 0.9
	27		R. BR, S, BKN, Sh,		26.6	UNACC 0.9
	28		Num. SLK, occ, MOTTLED			PULL #8 / STARt 10:04 / END 10:17 / TIME 13min
	29		w/ gR + gN, gR, severely		8	DRL 13min / RAN 9.9 / REC 9.1
	30		BKN 26.6-26.9, 30.0-			LOSS 0.2 T/DEP 29.9 / UNACC 0.2 DEP 29.9
	31		30.3, 32.5-34.0		30.3	PULL #9 / STARt 10:29
	32				9	END 10:40 / TIME 16min / DRL 16min
	33					RAN 4.2 / REC 4.6 / LOSS 0
463.6	34		Bottom Hole		34.0	UNACC 0 T/DEP 34.0
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67   GPO 1969 OF—329-243   PROJECT GALLiPOLiS Lock+DAM   HOLE NO. R-72/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS
1. PROJECT GALLIPOLIS LOCK + DAM		10. SIZE AND TYPE OF BIT 4 X 5½	
2. LOCATION (Coordinates or Station) MONO R-73 STA 6+20A		11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L	
3. DRILLING AGENCY W.G. JAQUES		12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE	
4. HOLE NO. (As shown on drawing title and file number) R-7311		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN / DISTURBED N/A / UNDISTURBED N/A	
5. NAME OF DRILLER STEVE FRYE		14. TOTAL NUMBER CORE BOXES 9	
6. DIRECTION OF HOLE		15. ELEVATION GROUND WATER N/A	
☑ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.		16. DATE HOLE STARTED 9/8/89 / COMPLETED 9/8/89	
7. THICKNESS OF OVERBURDEN Ø 497.4		17. ELEVATION TOP OF HOLE 497.4	
8. DEPTH DRILLED INTO ROCK 34.3		18. TOTAL CORE RECOVERY FOR BORING 33.4 %	
9. TOTAL DEPTH OF HOLE 463.1		19. SIGNATURE OF INSPECTOR LMD	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.4			SLS/CLS			PULL #1
	1					START 11:08
			Interbdd, SLS gr. S-			END 11:19
	2				1	TIME 11min
			m.H., Sh, occ, sg, BKN			DRL 11min
	3					RAN 9.9
			PNS 0.3 spacing, occ		3.5	REC 3.8
	4					LOSS 0.7
			Clayey. CLS, gr, S, Sh			UNACC 0.7 T/Drp 9.5
	5					DCP 9.9
			BKN PNS ~ 0.2 spacing			PULL #2
	6				2	START 12:35
			SLT 0.0-0.2, 0.8-26, 3.3-			END 12:48
	7					TIME 13min
			4.8, 5.6-7.3, 8.0-28, 11.6		7.7	DRL 13min
	8					RAN 9.3
			19.6, 20.1-22.0, CLS			REC 9.1
	9					LOSS 0.3 1
			0.2-0.8, 2.6-33, 7.3-8.0			UNACC 0.3 T/Drp 8.5 / DCP 9.2
	10				3	PULL #3
			9.8-11.6, 15.6-20.1, BKN			START 12:56
	11					END 1:06
			0.0-0.2, 2.8-3.1, 7.7-8.0		11.6	TIME 10min
	12					DRL 10min
			8.8-8.9, 11.0-11.6, 12.4-12.7			RAN 4.6
	13					REC 9.8
			BKN PNS ~ 0.1 spacing 0.0-		4	LOSS Ø UNACC Ø
	14					DCP 13.8 T/DD 13.7
			3.5, 6.2-8.0, SO/SLS 3.5-			PULL #4
	15				15.1	START 1:15
			4.8, 5.6-6.2, 13.7-15.5			END 1:28
	16					TIME 13min
			SO gr Lt gr., F.g. m.H			DRL 13min
	17				5	RAN 5.1
			4.8-5.6 CL/SLS 6.2-7.3			REC 4.7
	18					LOSS Ø
			8.9-9.1, 12.3-13.0, HighH		18.6	UNACC Ø T/Drp 18.4
	19				6 (cont)	
			ANG FRAC 14.5-15.9			DCP 19.9
	20					

			ELEVATION TOP OF HOLE *497.9*			Hole No. *R-73/1*
DRILLING LOG (Cont Sheet)						
PROJECT *Gallipolis Lock+Dam*			INSTALLATION *ORH-CD*			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLs/cls			Pull#5
	21				6	START 1:35 END 1:99 TIME 4min DPL 14min RAN 3.9
473.9	22					
			CLS		22.3	REC 9.5 LOSS 0.1 UNACC 0.1 T/DeP 23.0
	23		GR, S. Sh, gradational w/SLS @ Top + w/ICL @ Bottom			DEP 23.3 Pull#6
	24		SLK @ Bottom BKN, Securely BKN 23.6-29.5		7	START 1:57 END 2:05 TIME 8min
472.9						DPL 8min RAN 9.9
	25		ICL		26.0	RAN 9.9 REC 9.7
	26		R. BR, S, Sh, BKN, NUm,			LOSS 0 UNACC 0 T/DeP 27.3
	27		SLK, occ mottled w/			DEP 27.7
	28		GR-GN.GR., Securely		8	Pull#7 START 2:22 END 2:35
	29		BKN 24.5-26.0; 27.0-27.7		29.7	TIME 13min DPL 13min
	30		29.3-27.7			RAN 3.8 REC 3.9 LOSS 0.5
	31					UNACC 0.5 DEP 31.5
	32				9	Pull#8 T/DEP 31.6
	33					START 2:48 END 3:02
469.0			Bottom Hole		33.4	TIME 19min T/DEP 33.9
	34					DPL 14min DEP 39.3
	35					RAN 7.8
	36					REC 1.8
	37					LOSS 0 UNACC 0
	38					
	39					
	40					
	41					
	42					
	43					
	44					

| ENG FORM 1836-A JUN 67 | (ER 1110-1-1801) | GPO 1960 OF-628-603 | PROJECT *Gallipolis Lock+Dam* | HOLE NO. *R-73/1* |

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET OF SHEETS

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
MONO R-73   STA 6+55A

3. DRILLING AGENCY
W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number)
R-73/2

5. NAME OF DRILLER
STEVE FRYE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN   ∅ 497.0

8. DEPTH DRILLED INTO ROCK   33.3

9. TOTAL DEPTH OF HOLE   463.7

10. SIZE AND TYPE OF BIT 4V5VL

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL
B.-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | STARTED 9/13/89 | COMPLETED 9/13/89

17. ELEVATION TOP OF HOLE 497.0

18. TOTAL CORE RECOVERY FOR BORING 33.1

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SLS/CLS			PULL #1
	1		Inter bdd, SLT, gr. S-m,H			START 9:12
						END 9:22
	2		Sh, Bkn pns, 0.2-0.3 space			TIME 10min
					1	DRL 10 min
	3		CLS gr. S. Sh, Bkn pns			RAN 4.9
						REC 3.1
492.9	4		0.1-0.3 SPACING cont		4.1	LOSS 0.6 T/DEP 37
			SANDSTONE			UNACC 0.6
	5		gr, m.H VER-F.g.			DEP 4.9
						PULL #2 / START 9:30 / END 9:39
491.0	6		SLS/CLS		2	TIME 9min / DRL 9min / RAN 2.3
	7					REC 4.1
			SLS 0.0-2.7, 6.0-6.5, 7.7			LOSS 0 T/DEP 7.2
	8				7.8	UNACC 0 DEP 7.8
			-9.6, 12.2-18.0, 19.2-20.1			PULL #3
	9					START 9:46
			20.8.-21.3 CLS 2.7-5.1, 6.5			END 9:57
	10				3	TIME 7min
			7.7, 9.6-12.2, 18.0-19.2			DRL 7min
	11					RAN 5.0 / REC 4.3
			20.1-20.8, BKN PNS 0.1		11.6	LOSS 0 / UNACC 0
	12					DEP 12.2 T/D-12.1
			w/ 1.0-3.7, BKN 0.0-1.0			PULL #4
	13				4	START 10:06 / LOSS 0
			3.7-4.1 7.8-8.3, 18.0-18.5,			END 10:10 / UNACC 0
	14					TIME 4min
			20.1-20.8, clayey lsls			DRL 4min T/D-19.1
	15				15.0	RAN 1.9 / REC 2.2 DEP 18.3
			6.0-6.5, 12.2-12.9, 19.3-			
	16					PULL #5 / START 10:19
			18.0 CLAY SEAM 7.1-7.3		5	END 10:28 / TIME 9min
	17					DRL 9min
			Sa/SLT 8.7-9.1, 12.9-19.3			RAN 5.5 / UNACC 0
	18					REC 3.8
			BKN PNS 0.1 SPACING		18.5	LOSS 0 DEP 18.0
	19				6 (CON'T)	PULL #6 T/D-P18.1 / START 10:35
			w/cl cont'ing 9.6-12.2, 14.3-			END 10:44
	20			(cont)		TIME 9min / DRL 9min

PROJECT Gallipolis Lock + Dam	HOLE NO. R-73/2

| PROJECT GALLIPOLIS LOCK + DAM | | | | INSTALLATION OPH-CD | | | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS -17.3, 0.1-0.3 SPACING			PULL #6
475.7	21				6	PAN 4.5 REC 4.4 LOSS Ø 4 UNACC Ø
	22		CLS GR S, Sh, GRADATIONAL w/ SLT @ TOP TO ICL @ BOTTOM BKN, SLK @ BOTTOM SEVERELY BKN 22.4-22.5, 23.2-24.0		23.3	DEP + T/DEP 22.5
	23					PULL #7
473.0	24				7	START 10:50 END 11:06 TIME 16min DRL 16min
	25		ICL P-BR, S, Sh BKN, NUM			
	26		SLK OCC, MOTTLED w/GR-		25.7	PAN 7.9 REC 5.2 LOSS Ø
	27		GN, GR, SEVERELY BKN			UNACC Ø
	28		24.0-28.0		8	T/DCP 27.7
	29					PULL #8 START 11:20
	30				29.4	END 11:30 TIME 10min DEP 28.8
	31				9	DRL 10min PAN 2.5 REC 9.5 LOSS Ø
	32					UNACC Ø T/DCP 32.2 DEP 32.4
463.9	33		BOTTOM HOLE		33.1	PULL #9 START 12:40 T/DEP 33.1 DEP 33.3
	34					END 12:47 TIME 7min DRL 7min PAN 0.9 REC 0.9 LOSS Ø UNACC Ø
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono R 74 STA 6+65A

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) R-74/1

5. NAME OF DRILLER Steve Frye

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ ⊲497.3

8. DEPTH DRILLED INTO ROCK 34.9

9. TOTAL DEPTH OF HOLE 462.4

10. SIZE AND TYPE OF BIT 4 Y5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobele

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9/11/89 COMPLETED 9/11/89

17. ELEVATION TOP OF HOLE 497.3

18. TOTAL CORE RECOVERY FOR BORING 33.8

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.3			SLS/CLS			Pull #1
	1					START 7:48
	2		interbdd SLS/CLS		1	END 7:56
						Time 8min
			SLS, gr., S-m.H., Sh, bkn			DRL 8min
	3					RAN 4.9
			PNS -0.3 spacing, CLS,		3.7	REC 4.2
	4					LOSS 0.4
			gr. S., Sh, bkn pns			UNACC 0.4 TDCP 9.6
	5					DCP 9.9
			0.2 spacing, SLS 0.0-		2	Pull #2
	6					START 8:06
			2.5, 3.0-3.7, 4.6-8.1, 9.2			END 8:19
	7					Time 13 min
			17.3, 18.7-19.4 19.6-21.9		7.6	DRL 13 min
	8					RAN 9.4
			CLS, 2.5-3.0, 3.7-4.6, 8.1			REC 4.1
	9					LOSS 0.3 TIDCP 9.0
			-9.2, 17.3-18.7, 19.4-13.6		3	UNACC 0.3 DCP 9.3
	10					Pull #3
			BKN 0.0-1.0, 3.3-3.7, 8.2-			START 8:27
	11					END 8:36
			8.4, 9.0-9.4, 11.1-11.3, 12.8		11.3	Time 9min
	12					DRL 9min
			-14.0, CLS seam 14-1.5,			RAN 4.8
	13				4	REC 5.0
			2.9-3.0 CL/SLS 7.6-8.1			LOSS 0
	14					UNACC 0
			11.1-12.0, 20.0-21.9, BKN		14.4	DEP 14.1 TIDCP 14.0
	15					Pull #4
			PNS ~0.1 spacing w/		5	START 8:49
	16					END 9:01
			CL coating :50-7.4, 17.3			Time 12min
	17					DRL 12min
			18.7, Sa/SLT 9.5-10.7			RAN 4.9
	18					REC 4.5
					18.2	LOSS 0.2
	19				6 (cont)	UNACC 0.2 DEP 18.5
						TIDCP 18.7
	20					Pull #5
						START 9:10
						END 9:20

| PROJECT Gallipolis Lock+Dam | INSTALLATION ORH-CD | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS			PULL#5
	21				6	TIME 10min
						DRL 10min
475.4						RAN 4.5 UNACC Ø
	22				21.9	REC 4.6
			CLS			LOSS Ø
	23		gr., S, sh bkn			DEP 23.0
	24		gradational w/ Icl @		7	T/DEP 23.3
						PULL #6
472.3	25		bottom, severely bkn 22.6-26			START 9:30
			Icl		25.3	END 9:41
	26		R-Br, S, sh, bkn, num			TIME 11min
						DRL 11min
	27		slks, occ mottled w/			RAN 5.3
						REC 4.3
	28		gr. - g-gr, severely		8	LOSS 0.7
						UNACC 0.7
	29		bkn 8.3-8.8			
						DEP+T/DEP 28.3
	30				29.5	PULL#7
	31					START 9:50
						END 10:00
	32				9	TIME 10min
						DRL 10min
	33					RAN 6.0? T/DEP 31.4
465.5	34		BOTTOM HOLE		33.8	REC 2.2
	35					LOSS 0.9
						UNACC 0.9
	36					T/DEP 33.8
						DEP 34.3
	37					PULL#8 DEP 39.9
	38					START 10:10
						END 10:20
	39					TIME 10min
	40					DRL 10min
	41					RAN 0.6
	42					REC 2.4
	43					LOSS Ø
	44					UNACC Ø

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DRILLING LOG	ORD	INSTALLATION		SHEET 1 OF 2 SHEETS

1. PROJECT GALLipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO R-79 STA 7+00A

3. DRILLING AGENCY W.G. JAGUES

4. HOLE NO. (As shown on drawing title and file number) R-79/2

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 497.6

8. DEPTH DRILLED INTO ROCK 34.9

9. TOTAL DEPTH OF HOLE 463.2

INSTALLATION ORH-CP

10. SIZE AND TYPE OF BIT 4 X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBiLE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 9/13/89 COMPLETED 9/14/89

17. ELEVATION TOP OF HOLE 497.6

18. TOTAL CORE RECOVERY FOR BORING 33.7

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.6			SLS/CLS			Pull #1
	1					START 1:03
			Int+bdd SLS/CLS			END 1:10
	2				1	TimE 7min
			SLT gR, S-m.H., Sh, CLS			DRL 7min
	3					RAN 9.8
			gR, S, Sh, SLT 0.0-1.8,			REC 4.1
	4				3.8	LOSS 0.5
			1.2-3.8, 4.6-5.9, 6.7-7.8			UNACC 0.5
	5					DEP 9.8 T/DEP 9.6
			9.8-10.0, 10.3-10.7, 12.2-12.8			Pull #2
	6				2	START 1:17
			13.4-21.8, CLS, 1.8-1.2-3.8			END 1:25
	7					TimE 8min
			9.6, 7.8-9.8, 10.7-12.2, 12.8		7.8	DRL 8min
	8					RAN 5.1
			13.4 BKN 0.0-0.8, 8.1-			REC 5.2
	9					LOSS 0/1
			8.9, 9.1-9.6, 14.5-15.0, 15.8		3	UNACC 0
	10					DEP 9.9 T/DEP 9.8
			-16.1, 19.2-20.9, 21.0-21.3			Pull #3
	11					START 1:38 / END 1:47
			CL/SLS 0.8-1.8, 1.2-3.8,		11.4	TimE 9min
	12					DRL 9min
			20.4-21.0 BKN PNS ~0.1			RAN 3.6
	13					REC 3.6
			ORLESS 1.6-3.8, SO/SLS		4	LOSS 0 / UNACC 0
	14					DEP 13.5 T/DEP 12.9
			5.0-5.4, 6.7-7.8, 9.8			Pull #4
	15				15.0	START 1:55 / END 2:03
			-10.0, SS. gR. v.fg., m.H.			TimE 8min
	16					DRL 8min
			SLT (5.4-6.7) + (10.0-10.3)		5	RAN 9.9
	17					REC 2.8 T/DEP 16.6
			BKN PNS ~ o / w/cl coating			LOSS 0.9
	18					UNACC 0.9
			7.8-9.8, 10.7-13.9, HigHANg			DEP 17.9
	19				18.9	Pull #5
			FRAC 13.7-14.3, 15.0-15.8		6 (CONT)	START 2:13 / END 2:20
	20			(CONT)			TimE 6min
						DRL 6min

PROJECT GALLipolis Lock + Dam   **HOLE NO.** R-79/2

							SHEET 2
PROJECT GALLiPOLiS LoCK+DAm			INSTALLATION OPH-CD				OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS KLS			PULL#5
	21		CL/scAm 18.9-18.5 BKN		6	RAN 4.5
475I						REC 4.8
						LOSS 0 T/DEN 21.3
	22		CLS			UNACC 0
			SR, S, Sh, GRADATIONAL		22.9	DEP 22.9
	23					PULL #6
						START 12:37
			w/SLK @ Top + ICL BoTTom			END 2:43
	24				7	TIME 6min
473.0			SLK @ BOTTom			DRL 6min T/DEP 24.1
						RAN 2.5
	25		ICL			REC 2.8
						LOSS 0 DEP 24.9
	26		R-BR, S, SA, BKN, NUM SLK			UNACC 0
					26.1	PULL#7
						START 2:57
	27		ecc MOTTLed w/Ga-gnge,			END 3:10
						TIME 13min
	28		SCUeReLy BKN 27.0-27.7		8	DRL 13min
						RAN 9.0
	29		28.6-29.2			REC 5.1
						LOSS 0
						UNACC 0
	30				29.2	DEP +T/DEP 29.2
						PULL #8
						START 7:23
	31					END 7:55
						TIME 32min
						DRL 32min
	32				9	RAN 3.9
						REC 3.0
						LOSS 0
	33					UNACC 0 DEP 32.3
					34.7	PULL #9
464.0			BOTTOM HOLE		10	START 7:45
	34				33.7	END 7:51 T/DEP 33.7
	35					TIME 6min DEP 30.9
	36					DRL 6min
						RAN 2.1
	37					REC 1.5
	38					LOSS 0
						UNACC 0
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1960 OF-828-663   PROJECT GALLiPOLis LocK+DAm | HOLE NO. R-79/2

DRILLING LOG

DIVISION	INSTALLATION	SHEET
OCD	ORH-CD	1 OF 2 SHEETS

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
Mono M-1   STA 15+76 B

3. DRILLING AGENCY
W.G. Jacques

4. HOLE NO. (As shown on drawing title and file number)
M-111

5. NAME OF DRILLER
Dave Happer

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN   0   496.2

8. DEPTH DRILLED INTO ROCK   38.2

9. TOTAL DEPTH OF HOLE   458.0

10. SIZE AND TYPE OF BIT   4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL)   M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL   B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES   11

15. ELEVATION GROUND WATER   N/A

16. DATE HOLE | STARTED 12/12/88 | COMPLETED 12/12/88

17. ELEVATION TOP OF HOLE   496.2

18. TOTAL CORE RECOVERY FOR BORING   38.2   %

19. SIGNATURE OF INSPECTOR   JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.2			SANDSTONE			PULL #1 START 1:00 END 1:12 TIME 12 min DRL 12 min
	1		gr-ltgr, M-H, F-Cg.			
	2		grad ational - coarser		1	PAN 4.3 REC 4.3 LOSS 0
	3		w/depth			UNAcc 0
	4		mic xbddg @ 493.5		3.7	PULL #2 START 1:27 END 1:37 DEP 3.7
	5		sh stringers and frag		2	TIME 10 min DRL 10 min PAN 3.5
	6		488.9-488.3			REC 3.6 LOSS 0.1
	7				6.9	UNAcc 0.1
488.3	8		ICL		3	PULL #3 START 1:57 END 2:12 DEP 7.9
	9		r-br, s.-ve s, mottled w/			TIME 15 min DRL 15 min
	10		ltgr cl 488.1, 487.7 +86.2 486.1 488.3-488.1 sco-poly bdg 486.1-485.8		10.1	PAN 2.5 REC 2.8 LOSS 0 UNAcc 0 DEP 10.1
485.9			SLS			PULL #4 START 2:28 END 2:42
	11		gr-gn/gr ls-M-H,		4	TIME 14 min DRL 14 min LOSS 0
	12		sa, scupdrk Bkn 485.3			PAN 3.3 UNAcc 0
	13		485.0, cl coated Bdpn.		13.5	REC 3.1 DEP 13.5
	14		@ 479.8 Fe stain 479.7		5	PULL #5 START 2:57 END 3:09
	15		- 479.5			TIME 12 min DRL 12 min
479.5	16				17.3	PAN 5.0 REC 5.0 LOSS 0
	17		SANDSTONE gr-ltgr., M-H, F-M.g			
	18		mic, x-bd, sh seams w/		6 (cont)	UNAcc 0 DEP 18.5
	19		sm amounts of el 472.0-			PULL #6
	20		471.5 (cont)			

PROJECT	HOLE NO.
Gallipolis Lock + Dam	M-111

	ELEVATION TOP OF HOLE						
		496.2				Hole No.	M-111

PROJECT: GALLiPOLiS LOCK + DAM
INSTALLATION: OPH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20				6	
	21		SANDSTONE		20.7	Pull #6
	22		Severely Mech BKN			START 7:58
						END 8:30
			468.4 - 468.1, Mech		7	TIME 32min
	23					DEL 32min
	24		Chipped @ 468.1, 467.6			HAN 9.0
						REC 9.6
	25		467.1, 456.1, sh stringers		24.4	LOSS 0
						U.NACC 0
	26		find Frags 462.3-463.7		8	
	27					
	28				27.8	
	29					DEP 28.1
	30				9	Pull #7
						START 8:59
	31					END 9.18
					31.3	TIME 29min
	32					DEL 29min
						HAN 10.2
	33					REC 10.1
	34				10	LOSS 0.1
	35				34.4	U.NACC 0.1
	36					
	37				11	
458.0	38		BOTTOM HOLE		38.2	DEP 38.2
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67 (ER 1110-1-1801) GPO 1980 OF-626-803
PROJECT: GALLipolis Lock + Dam
HOLE NO. M-111

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-LD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam	10. SIZE AND TYPE OF BIT 4 x 5½
2. LOCATION (Coordinates or Station) Mono M-1 STA 15+32R	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL
3. DRILLING AGENCY W. G. Jaoues	12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile
4. HOLE NO. (As shown on drawing title and file number) M-112	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER WAYNE TICE	14. TOTAL NUMBER CORE BOXES 11
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE — STARTED 12/13/88 — COMPLETED 12/13/88
7. THICKNESS OF OVERBURDEN Ø 496.7	17. ELEVATION TOP OF HOLE 496.7
8. DEPTH DRILLED INTO ROCK 37.7	18. TOTAL CORE RECOVERY FOR BORING 37.8 %
9. TOTAL DEPTH OF HOLE 459.0	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE			PULL #1
	1		SS- LT.GR., M-H, F-Cg.			START 9:17
						END 9:30
	2		occ. mic, gradational		1	TIME 13MIN
						DRL 13MIN
	3		coars+ w/depth, occ. Y-ed			RAN 4.8
					35	REC 4.8
	4		num mic bd pns, above			LOSS Ø
						UNREC Ø
	5		492.6, Fe stained 496.7-496.5			DEP 4.8
					2	PULL #2
	6		occ shale frag b-teen			START 9:35
						END 9:47
	7		486.4			TIME 12MIN
					20	DRL 12MIN
						RAN 4.2
	8					REC 4.0
						LOSS Ø.2
	9				3	UNREC 0.2 DEP 9.0
						PULL #3
	10					START 10:00
					10.4	END 10:14
485.7	11					TIME 14MIN
						DRL 14MIN
	12		SLS			RAN 5.0
			SS- gr/gr, S-mH,		4	REC 5.0
	13		gradational w/... to			LOSS Ø
						UNREC Ø
	14		se @ bottom, severely		14.0	DEP 14.0
						PULL #4
	15		BKN 485.7-484.3 485.7-484			START 10:35
						END 10:41
	16		dips/pn 30° w/slk 484.0-483.9sa		5	TIME 6MIN
						DRL 6MIN DEP 15.9
	17		below 481.7, F.g. ss 480.9-478.9			RAN 1.8
						REC 1.9
478.8						LOSS Ø
	18				6	UNREC Y
			SANDSTONE		(cont)	
	19					PULL #5
	20		(cont)			START

PROJECT	INSTALLATION	SHEET 2
GALLipoLis Lock + DAm	OPH-CD	OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL#5
	21		gr - Lt gr. , m-H, F-mg		26.1	START 11:35
	22		mic. Y bd, grad at ional		7	END 11:58 TimE 23min DRi 23min
	23		contact w/ upper SLS			RAN 9.5 REC 9.5
	24		PaoTially Lt.Fe STAined			Loss 0 UNACC 0
	25		476.6, LE.F. - SLT 469.5 to		29.0	
	26		468.5, SL.STAin, 463.5 -		8	DEP 25.4 PULL #6
	27		463.9			START 1:00
	28				28.2	END 1:20 TimE 20min DRL 20min
	29					RAN 28 REC 27
	30				9	Loss 0 UNAcc 0
	31				31.8	
	32					
	33				10	
	34					
	35				35.1	DEP 35.1
	36				11	PULL#7 START 1:40 END 1:51
	37				37.8	Time 11min DRL 11min
458.9	38		23' 40'n HOLE		37.8	RAN 2.8 REC 29 Loss 0 UNACC 0
	39					DEP 38.0
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) JUN 67	GPO 1980 OF - 628 - 603	PROJECT GALLipoLis Lock + DAm	HOLE NO. M-1/2

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DRILLING LOG	DIVISION _OPD_	INSTALLATION _OPH-CD_	SHEET 1 OF 2 SHEETS

1. PROJECT _Gallipolis Lock + Dam_

2. LOCATION (Coordinates or Station) _Mono M-2 STA 15+30_

3. DRILLING AGENCY _W.G. Jaques_

4. HOLE NO. (As shown on drawing title and file number) _M-2/1_

5. NAME OF DRILLER _Dave Harper_

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø _496.4_

8. DEPTH DRILLED INTO ROCK _37.5_

9. TOTAL DEPTH OF HOLE _458.9_

10. SIZE AND TYPE OF BIT _4 X 5½_

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) _M.S.L._

12. MANUFACTURER'S DESIGNATION OF DRILL _B-53 MOBILE_

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED _N/A_ | UNDISTURBED _N/A_

14. TOTAL NUMBER CORE BOXES _11_

15. ELEVATION GROUND WATER _N/A_

16. DATE HOLE STARTED _12/13/88_ COMPLETED _12/13/88_

17. ELEVATION TOP OF HOLE _496.4_

18. TOTAL CORE RECOVERY FOR BORING _37.5_ %

19. SIGNATURE OF INSPECTOR _JMD_

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.4			SANDSTONE			Pull #1
	1					START 10:17
			gr-lt.gr, M.H. F-C.g.			END 10:30
	2				1	TIME 13 min
			occ. mic:, Interbdt L-Fg			DRL 13 min
	3					RAN 4.2
			mech chipping 4 16.7, 495.1			REC 4.2
	4				3.6	Loss Ø
			492.3			UNACC Ø
	5					DEP 4.2 T/DEP 4.1
						Pull #2
	6				2	START 10:47
						END 10:56
	7					TIME 9 min
						DRL 9 min
	8				7.2	RAN 4.5
487.9						REC 4.7
	9		ICL		3	Loss Ø
			l. Br, S, mottled w/gr-gn			UNACC Ø
	10		ch, Ltgr 487.9-487.0 lotty			DEP 8.7 T/DEP 8.6
485.3			@ 487.9-487.3		10.5	Pull #3
	11					START 11:10
	12		SLS			END 11:26
			gr-gn-gr S. M.H.		4	TIME 16 min
	13					DRL 16 min
			k-STAIN -485.3-489.9			RAN 2.2
	14				13.8	REC 2.2
			CL spnm @ 482.5, Brn			Loss Ø UNACC Ø
	15					TIDEP 10.8 DEP 10
			pn~.2 spacing 482.3		5	Pull #4
	16					START 12:26
479.6			480.9			END 12:45
	17				17.0	TIME 19 min
			SANDSTONE			DRL 19 min UNACC Ø
	18		gr-lt.gr, M.H, F-M.g		6	RAN 2.9
			mic occ l-Br, mech brn			REC 3.0
	19					Loss Ø T/DEP 13.7 DEP 13.9
			462.2-462.0		(cont)	Pull #5
	20		(cont)			START 1:50
						END 2:00
						TIME 10 min T/DEP 15.2
						DRL 10 min DEP 15.0
						RAN 1.5
						REC 1.5
						Loss Ø
						UNACC Ø
						Pull #6
						START 1:30
						END 2:02
						TIME 32 min
						DRL 32 min
						(cont)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT _Gallipolis Lock+Dam_ HOLE NO. _M-2/1_

						SHEET 2 OF 2 SHEETS

PROJECT Gallipolis Lock + Dam   **INSTALLATION** OEH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	Pull #6
					20.7	RAN 8.8
	21					REC 8.8
						LOSS 0
	22					UNACC 0
					7	
	23					
	24					T/DEP 29.0
					29.4	29.9
	25					Pull #7
						START 2:17
	26				8	END 2:41
						TIME 24 min
	27					DRL 24 min
						RAN 10.0
	28				28.1	REC 10.0
						LOSS 0
	29					UNACC 0
	30				9	
	31					
	32				31.8	
	33					
	34				10	T/DEP 39.0
						DCP 34.4
	35				35.1	Pull #8
						START 2:57
	36				11	END 3:20
						TIME 23 min T/DEP 36.2
						DRL 23 min
	37					RAN 3.3
458.9			Bottom Hole		37.5	REC 3.2 DCP 37.9
						LOSS 0.2
	39					UNACC 0.2
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) JUN 67   GPO 1980 OF - 629-503   **PROJECT** Gallipolis Lock + Dam   **HOLE NO.** M-211

DRILLING LOG	DIVISION	INSTALLATION	SHEET 1

	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO M-2 STA 14+84B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-2/2

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 496.1

8. DEPTH DRILLED INTO ROCK 36.9

9. TOTAL DEPTH OF HOLE 459.2

10. SIZE AND TYPE OF BIT 4X5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | **STARTED** 12/13/88 | **COMPLETED** 12/14/88

17. ELEVATION TOP OF HOLE 496.1

18. TOTAL CORE RECOVERY FOR BORING 36.1

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
496.1 495.5			SANDSTONE gR, M-H, F.g			Pull #1 START 2.51 END 3.00 TIME 9min DRL 9min RAN 3.7 REC 3.7 LOSS ∅ UNACC ∅
	1 2 3		SLS gR, S-M.H, Sh, Sa @ 493.9-494.2, securely mech BKN Sh 492.4-492.3		1	
492.3					3.7	DEP 3.7
	4 5 6 7 8		SANDSTONE LT.gR, M.H, M.C.g, occ Sh. Frag, + STRINGERS F.g. 492.3-491.8, 486.9-486.8 mech bkn 487.1-487.3, sh SCAM 487.0-486.9		2 7.3	Pull #2 START 7:10 END 7.35 TIME 25min DRL 25min RAN 5.0 REC 5.0 LOSS ∅ UNACC ∅ DEP 8.7
486.8	9				3	Pull #3 START 8:13
	10 11		CLS LT.gR. S., MOTTLED, R-BR gR, gN. @ 485.6-484.7, ANg pN 20° w/SLK 486.8-486.7		10.8	END 8:35 TIME 22min DRL 22min RAN 4.5
484.1	12					REC 4.1
	13 14 15 16 17		SLS gR-gN, gR, S-m.H gRADATIONAL w/sh @ Top- Sa al Bottom, BKN pNS 0.2 482.9-481.0, Sa BKN below 481.0, F.g. SS 480.2-479.5		4 14.7 5	LOSS 0.4 UNACC 0.4 DEP 13.2 Pull #4 START 9:41 END 10.06 TIME 25min DRL 25min RAN 2.7 REC 2.7 LOSS ∅ UNACC ∅ DEP 15.9
478.5						
	18 19 20		SANDSTONE gR-LT.gR, M.H, F-m.g. (CONT)		18.2 & (CONT)	Pull #5 START 10:15 END 10.44

PROJECT GALLIPOLIS LOCK+DAM

HOLE NO. M-2/2

| PROJECT GALLIPOLIS LOCK + DAM | | | | INSTALLATION ORH-CD | | | SHEET Z OF Z SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #5
	21		mic, occ X-Bd, gradational			TIME 29min
	22		CONTACT w/ upper Sts		21.8	DRL 29min
						RAN 8.7
	23		Thin interbdd Sts			REC 8.7
						Loss 0
	24		491.0 - 469.7		7	UNACC 0
	25				25.4	PULL #6
	26					
	27				8	START 11:01
						END 1:30
	28					TIME 29min
						DRL 29min
	29				29.2	RAN 10.0
						REC 10.0
	30					Loss 0
	31				9	UNACC 0
	32					
	33				32.8	
	34				10	
	35					DEP 34.6
						PULL #7
459.2	36		BOTTOM HOLE		36.1	START 12:20
						END 12:30
	37					TIME 10min
						DRL 10min	DEP 36.9
	38					RAN 2.3
						REC 2.3
	39					Loss 0
						UNACC 0
	40					
	41					
	42					
	43					
	44					

DRILLING LOG

DIVISION ORD	**INSTALLATION** ORH-CD	**Hole No.** M-31 **SHEET 1 OF 2 SHEETS**

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO M-3 STA 19+79 R

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-31

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 499.5

8. DEPTH DRILLED INTO ROCK 35.6

9. TOTAL DEPTH OF HOLE 458.9

10. SIZE AND TYPE OF BIT 4V5V₂

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN N/A **DISTURBED** N/A **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/15/88 COMPLETED 12/15/88

17. ELEVATION TOP OF HOLE 499.5

18. TOTAL CORE RECOVERY FOR BORING 35.5

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
499.5			SANDSTONE			Pull #1
	1		gr-Ltgr, m-H, F-Cg.			START 7.45
						END 7.53
	2		Cg. w/occ sh frag +		1	TIME 8min
						DRL 8min
	3		STRINGERS 492.0-489.9			RAN 5.0
					3.6	REC 5.0
	4		mic below 489.5			LOSS Ø
						UNACC Ø
	5				2	DEP 5.0
489.0			ICL			Pull #2
	6		ℓ.Br, S, MOTTLED w/gr+			START 8.10
						END 8.32
	7		gn cl, scucrehy BKN		7.1	TIME 22min
						DRL 22min
	8		483.7-483.4, scucrehy mech			RAN 3.9
						REC 3.8
	9		BKN 485.6-985.3		3	LOSS 0.1
483.7						UNACC 0.1 DEP 8.9
	10		SLS			Pull #3
						START 8.53
						END 9.12
	11		gr-gnge, S-m.H, gradAtion			TIME 19min
						DRL 19min
	12		w/sh @ Top - sg @ Bottom		11.3	RAN 3.6
						REC 3.6
	13		ang pn ~20° @ 483.7			LOSS Ø
					4	UNACC Ø DEP 12.5
	14		Angpn w/slk 483.3-983.2			Pull #4
					14.5	START 9.31
	15		Sg below 481.1			END 9.47
478.9						TIME 16min
	16		SANDSTONE		5	DRL 16min
						RAN 7.1
	17		gr-Ltgr., m.H. F-mg.			REC 7.1
						LOSS Ø
	18		mic, grAdAtional contact		18.0	UNACC Ø
	19		w/upper slt, mech		6 (CONT)	
						DEP 19.6
	20		(CONT)			Pull #5

PROJECT GALLIPOLIS LOCK + DAM			INSTALLATION ORH-CO			SHEET Z OF Z SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	20		SANDSTONE		6	PULL #5	
	21				21.5	START 10:05	
	22		Chipped 477.0 - 476.7			END 10:25	
						TIME 20min	
	23		F.g. SLT ABOVE 476.5		7	DRL 20min	
	24		SLT 473.8 - 472.5			RAN 10.0	
						REC 10.0	
	25		Thin sh Frag + s Tringers		24.7	LOSS Ø	
			470.6 - 469.6, LTRA NOD			UNACC Ø	
	26		w/2 Ai ccm.		8		
	27						
	28						
	29				28.9		
						DEP 29.6	
	30					PULL #6	
	31				9	START 10:42	
						END 11:04	
	32					TIME 22min	
					32.9	DRL 22min	
	33					RAN 5.5	
						REC 5.5	
	34				10	LOSS Ø	
						UNACC Ø	
	35						
459.0			Yellow shale		35.5	DEP 35.5	
	36						
	37						
	38						
	39						
	40						
	41						
	42						
	43						
	44						

ENG FORM 1836-A JUN 67 (ER 1110-1-1801)   GPO 1960 OF - 628 - 603   PROJECT GALLIPOLIS LOCK+DAM   HOLE NO. M-3/1

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DRILLING LOG

DIVISION	ORD

INSTALLATION	ORH-CD
SHEET	1 **OF** 2 **SHEETS**

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO M-3 STA 14+36 B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-3/2

5. NAME OF DRILLER A. TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 493.9

8. DEPTH DRILLED INTO ROCK 39.9

9. TOTAL DEPTH OF HOLE 454.0

10. SIZE AND TYPE OF BIT 4 15.5 IN

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/11/89 COMPLETED 1/11/89

17. ELEVATION TOP OF HOLE 493.9

18. TOTAL CORE RECOVERY FOR BORING 39.5

19. SIGNATURE OF INSPECTOR LMN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
493.9			CLS			PULL #1
	1		SLy., S. m.h., M.-dk. gR.		Box 1	START 13.00
						END 13.11
						TIME 11 min
	2					DRL 11 min
						RAN 4.4
						REC 4.4
	3					LOSS Ø
						UNACC Ø
490.2				3.7		
	4		SANDSTONE			DEP 4.4
	5		m-c.g., m.h., m.gR		Box 2.	
	6					PULL #2
	7				7.1	START 13:15
485.9	8					END 13:46
			SLS/cLy			TIME 31.0 min
	9		S.-m.h., m.gR. bKN-		Box 3.	DRL 31. min
			8.0-9.4 (mech); hA.)			RAN 14.4
	10		SLK. PTg. 10.-10.4			REC 10.0
	11		bKN (mech) 13.6-14.6		10.7	LOSS Ø
						UNACC Ø
	12				Box 4	
	13					
	14					
479.3				14.4		DEP 14.4.
	15		SLS/SS			PULL #3
	16		m.gR. m.h. w/ occ sLy		Box 5	
	17		PTg. in sLy AREAS			START 13:59
	18				17.9	END 14:25
						TIME 26.0
	19				Box 6	DRL 26.0
						RAN 24.4
	20		(CONT)		(CONT)	REC 10.0
						(CONT)

PROJECT GALLipolis Lock & DAM				INSTALLATION ORH-CD		SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS / ss		Box 6	Pull #3
	21		M.gr. m.h. w/occ shy			LOSS 0
	23		PTg. in shy AREAS		21.6	UNACC 0
					Box 7	
	24					
	25					DEP 24.4
					25.1	Pull #4
	26				Box 8	START 14:43
	27					END 15:00
						TIME 27 min
	28					DRL 27 min
					28.7	RAN 34.5
	29					REC 10.1
	30				Box 9	LOSS 0
						UNACC 0
	31					
	32				32.2	
	33					
	34					
	35				Box 10	DEP 34.5
	36					
	37					
	38					
	39					
454.4			Bottom HOLE.		39.5	
	40					
	41					
	42					

ENG FORM 1836-A JUN 67 | GPO: 1968 OF—339-243 | PROJECT GALLipolis Lock & DAm | HOLE NO. M-3/2

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DRILLING LOG	DIVISION ORD		INSTALLATION OEH-CD		Hole No. M-4/1 SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO M-4 STA 19+26B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-4/1

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 493.0

8. DEPTH DRILLED INTO ROCK 43.9

9. TOTAL DEPTH OF HOLE 499.1

10. SIZE AND TYPE OF BIT 4V5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 13

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/15/88 COMPLETED 12/15/88

17. ELEVATION TOP OF HOLE 493.0

18. TOTAL CORE RECOVERY FOR BORING 43.9 %

19. SIGNATURE OF INSPECTOR JMN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
493	1 2 3		SANDSTONE LT.GR., M.-H. m-cg, num sh frag + stringers 492.7 491.0, m-gr below 491.0 num mic bdpns 490.7-490.6		1	PULL #1 START 1:08 END 1:23 TIME 15min DRL 15min RAN 3.0 REC 2.6 LOSS 0.4 UNACC 0.4 DEP 3.0
490.0	3 4 5 6 7		ICL R-BR, S, mottled w/gr -gngr, mech brn 490.0 - 488.9, scu-rely brn 489.3-488.0, 487.4 487.0, 483.8 - 485.7, ang pn w/slk 489.7-488.6 488.6-488.5 487.6-487.5	3.7	2	PULL #2 START 1:35 END 1:45 TIME 10min DRL 10min RAN 3.0 REC 5.0 LOSS 0 UNACC 0
485.7	8 9 10 11		SLS gr-gngr, S-M.H. gradational w/ top to sa @ bottom, sa below 484.1	7.6	3	DEP 8.0 PULL #3 START 1:51 END 2:16 TIME 25min DRL 25min RAN 9.5 REC 9.6 LOSS 0 UNACC 0
481.2	12 13 14 15 16 17 18 19 20		SANDSTONE gr-LTGR, m.h, F-m.g, occ mic, gradational contact, w/upper slt, occ x-bd, high ang frac 480.9-480.2 SLS (gr, s) 478.5-478.0 480.1-476.6 (Cont)	11.1 4 14.9 5 14.2 6 (cont)	4 5 6	DEP 17.6 PULL #4 START 2:32 END 2:53 TIME 21min (Cont)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock + Dam **HOLE NO.** M-4/1

| PROJECT GALLIPOLIS LOCK+DAM | INSTALLATION ORH-CD | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			PULL#4
	21				6	DRL 2/min
			HIGH ANG. FRAC 475.2-474.8		21.6	RAN 6.5
	22					REC 6.5
			SHALE SEAM 468.7-468.7			LOSS 0
	23				7	UNACC 0
	24		NUM MIC BANDS 464.0			
						DEP 24.1
	25		463.9, 460.1-460.0,		25.0	PULL #5
	26		458.0-457.9, 456.3-456.2			
	27				8	START 3:09 END 3:34 TIME 25min DRL 25min
	28				28.7	RAN 7.6 REC 5.7 LOSS 0
	29					UNACC 2
	30				9	
	31					
	32				32.3	
	33					
	34				10	DEP 33.8
	35					PULL #6 START 3:54
	36				35.7	END 4.19 TIME 20min
	37				11	DRL 20min RAN 10.1 REC 10.1
	38					LOSS 0 UNACC 0
	39				39.3	
	40					
	41				12	
	42					
	43				43.1	
449.0	44		BOTTOM HOLE		13 43.9	DEP 43.9

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 3 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MOND M-4 STA 13+94 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-4/2

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.1

8. DEPTH DRILLED INTO ROCK 47.7

9. TOTAL DEPTH OF HOLE 448.4

10. SIZE AND TYPE OF BIT 4X5.5 IN.

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 13

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/11/89 COMPLETED 1/11/89

17. ELEVATION TOP OF HOLE 496.1

18. TOTAL CORE RECOVERY FOR BORING 47.7 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.1	1 2		CLS m.-dk. gr , s.-m.h., shy		Box 1	Pull #1 START 15:50 LOSS Ø END 16:05 UNACC Ø TIME 15min DRL 15min RAN 4.5
493.1	3 4 5		SANDSTONE m.-c.g., m.h., m.gr.		3.7 Box 2.	REC 4.5 DEP 4.5 Pull #2 START 16:10 END 16:40 TIME 30 min
489.7	6 7 8 9 10		CLS/ICL m.gr., s., ve. bkn 6.4-11.0		7.2 Box 3.	DRL 30 min RAN 11.3 REC 6.8 LOSS Ø UNACC Ø
484.8	11 12 13 14		SLS SA, m.h, m.gr. grading into SS/SLS		10.9 Box 4.	DEP 11.3 Pull #3 START 17:10 END 17:25 TIME 15 min
	15 16 17				14.4 Box 5	DRL 15 min RAN 19.8 REC 8.5 LOSS Ø UNACC Ø
477.7	18 19 20		SS/SLS (CONT)		17.9 Box 6 (CONT)	DEP 19.8 Pull #4 (CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam HOLE NO. M4/2

PROJECT GALLIPOLIS Locks + DAM INSTALLATION ORH-CD   SHEET 2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SS/SLS		Box 6	Pull #4
	21					
	22		INTerbdd, m.h.,		21.5	START 17:45
						END 18:00
	23		M.gr., SS. - Pig.Sky		Box 7	TIME 15 min
						DRL 15 min
	24		Mostly SS. below 22.0			RAN 29.9
						REC 10.1
	25				25.3	LOSS 0
						UNACC 0
	26					
	27				Box 8.	
	28					
	29				29.1	
	30				Box 9	DEP 29.9
	31					Pull #5
	32				32.5	START 18:25 END 18:45
	33					TIME 20 min DRL 20 min
	34				Box 10	RAN 39.7 REC 9.8
	35					LOSS 0 UNACC 0
	36				36.0	
	37				Box 11	
	38					
	39					
	40				39.7	DEP 39.7
	41				Box 12	Pull #6
	42					START 19:25 END 20:10
	43				43.4	TIME 45min
	44		(CONT)		Box 13 (CONT)	(CONT)

PROJECT GALLIPOLIS LOCK & DAM **INSTALLATION** ORH-LD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	44		SS/SLS			PULL #6
	45		INTER Bdd, m.h., M.gr.		Box 13.	DRL 45 MIN
	46		SS. - Pig. sky. Mostly			RAN 47.7
			SS. below 22.0			REC 8.0
	47					LOSS 0
						UNACC 0
448.4	48		BOTTOM HOLE		47.7	DEP 47.7
	49					
	50					

DRILLING LOG	DIVISION ORD		INSTALLATION OEHCD			SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO M-S STA 13+89 B

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-S/1

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 492.8

8. DEPTH DRILLED INTO ROCK 45.1

9. TOTAL DEPTH OF HOLE 457.7

10. SIZE AND TYPE OF BIT 4YS½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 12

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/16/88 COMPLETED 12/16/88

17. ELEVATION TOP OF HOLE 492.8

18. TOTAL CORE RECOVERY FOR BORING 43.3 %

19. SIGNATURE OF INSPECTOR JTM

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
492.8			SANDSTONE			PULL #1
	1		LT.gr, m.H.-H, m, c.g.			START 8:37
			Num Sh Frag. + Stringers			END 8.57
490.7	2		491.2 - 990.7			TIME 20 min
					1	DRL 20 min
	3		ICL			RMIN 2.5 Dep 2.5
			R.BR., S, mottled w/gr +			REC 2.5
			gn-gr mccl BKN 490.3-490.1		3.4	LOSS 0
488.7	4					UNACC 0
			SLS			PULL #2
	5		gr-gngr, S - m.H.			START 9.06 Dep 5.1
	6		Sandational, w/sh @ Top		2	END 9.13
						TIME 7 min
	7		- Sa @ Bottom, severely			DRL 7 min
	8		BKN 487.7-987.5, Hng Frac		7.5	RAN 2.6
						REC 2.5
	9		20° 483.8 -483.7			LOSS 0.1
						UNACC 0.1
	10				3	PULL #3
						START 9.26
481.7	11				11.1	END 9.48
			SANDSTONE			TIME 22 min
	12		gr-LTgr, m.H, m-F.g.			DRL 22 min
	13		mic, occ x-BH, SLT		4	RAN 8.6
						REC 7.9
	14		479.9-479.8, 477.9-477.3			LOSS .7
	15		occ sh stringers 475.5-		19.7	UNACC .7 Dep 13.7
	16		476.2, 976.7, uncl frac			PULL #4
						START 10.04
	17		457.4 -455.1, calcite		5	END 10.23
						TIME 19 min
	18		Filled veins 456 & 476.2		18.1	DRL 19 min
						RAN 7.9
	19		Core Dia Loss 459.0		6 (cont)	REC 9.5
						LOSS 0
	20		cont			UNACC 0 (cont)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock+Dam   HOLE NO. M-S/1

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PROJECT Gallipolis Lock + Dam				INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			PULL #4
	21		— 958.9 w m, mic, bn		6	
	22		PMS, 959.1, 955.0		21.7	
	23		949.7 – 949.9		7	
	24					DEP 23.6
	25				25.3	PULL #5
						START 11.09
						END 11.20
	26				8	TIME 16 min
	27					DRL 16 min
						PEN 9.8
	28					REC 9.8
						LOSS Ø
	29				28.9	UNACC Ø
	30					
	31				9	
	32					
	33				32.6	
	34					DEP 33.4
					10	PULL #6
	35					START 11.42
					35.9	END 12.00
	36					TIME 17 min
						DRL 17 min
	37					PEN 10.0
						REC 10.0
	38					LOSS Ø
					11	UNACC Ø
	39					
					35.4	
	40					PULL #7
						START .00
	41					END 1.09
						TIME 4 min
						DRL 4 min
	42				12	PEN 1.9
						REC 1.9
	43					LOSS Ø
					45.3	UNACC Ø
417.5	49		Bt ... 43.3			DEP 45.3

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	

1. PROJECT Gallipolis Lock ! Dam	**10. SIZE AND TYPE OF BIT** 4 y 5.5"	
2. LOCATION (Coordinates or Station) MONO M-5 STA 13+48 B	**11. DATUM FOR ELEVATION SHOWN (TBM or MSL)** M.S.L.	
3. DRILLING AGENCY W.6. JAQUES	**12. MANUFACTURER'S DESIGNATION OF DRILL** B-57 MOBILE	
4. HOLE NO. (As shown on drawing title and file number) M-5/2	**13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN** DISTURBED N/A UNDISTURBED N/A	
5. NAME OF DRILLER WAYNE TICE	**14. TOTAL NUMBER CORE BOXES** 13	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	**15. ELEVATION GROUND WATER** N/A	
	16. DATE HOLE STARTED 1/12/88 COMPLETED 1/12/88	
7. THICKNESS OF OVERBURDEN ⌀ 494.8	**17. ELEVATION TOP OF HOLE** 494.8	
8. DEPTH DRILLED INTO ROCK 46.8	**18. TOTAL CORE RECOVERY FOR BORING** 46.8 %	
9. TOTAL DEPTH OF HOLE 448.0	**19. SIGNATURE OF INSPECTOR** LMD	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
494.8			SANDSTONE			Pull #1
494.1			M. Cg., m.h., m.gr. 0.5cc. 0.7-1.2			
	1.		SANDSTONE		Box 1	START 9:25
			Sly; fig., m.h., m.gr			END 9:33
	2.		w/dk gr. shy lam			TIME 8 min
						DRL 8 min
						RAN 4.7
	3.					REC 4.2
						LOSS 0.5
491.2					3.6	UNACC 0.5
	4.		SANDSTONE		Box 2	
489.8			M. Cg. m.h., m.gr, 2 s.gr.cc			DEP + T/DCP 4.7
	5.		5.0-5.2			
			SANDSTONE			Pull #2
	6.					
			fig, m.h, sly, m.gr			START 9:45
	7.		CLS. LEN w/IRR. ang		7.2	END 9:59
			CONTACT @ 10.3-11.4			TIME 14 min
	8.		O.,ha - VCR,IRR. Frac		Box 3	DRL 14 min
			13.0-14.0: 1.0 LC betwn			RAN
	9.		4.7 ! 14.0			REC 8.3
	10.					LOSS 1.0
						UNACC 1.0
	11.				12.9	
	12.				Box 4	
	13.					
480.8	14.				14.4	T/DEP 14.0
			CLS/SS			DEP 14.4
	15.		Interbdd., ss. fig		Box 5	Pull #3
			0.1 S.gr. CLS len @			
	16.		17.4 bkn 17.5-17.7			START 10:25
	17.					END 10:37
477.1					17.7	TIME 12 min
	18.		SANDSTONE		Box 6	DRL 12 min
						RAN
	19.					REC 10.0
						LOSS ⌀
	20.		(CONT)		(CONT)	UNAC ⌀ (CONT)

DRILLING LOG (Cont Sheet)

PROJECT GALLIPOLIS LOCK & DAM				**ELEVATION TOP OF HOLE** 494.8		**Hole No.** M-5/2
			INSTALLATION ORH-CD			**SHEET** 2 **OF** 3 **SHEETS**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		Box 6	
	21					Pull #3
	22		sky, fig, m.h., m.gr		21.4 — Box 7	
	23		0.1 cls lens @ 20.5			
	24		45° smooth, mic. ptg			T/DEP 23.6 — PEP - 24.0
	25		@ 26.0			Pull #4
	26		occ dkgr sky lam		26.0 — Box 8	START 11:06 END 11:18 TIME 12 min DRL 12 min RAN REC 10.1 LOSS ∅ UNACC ∅
	27					
	28					
	29				29.4 —	
	30				Box 9	
	31					
	32					
	33				32.9 —	
	34				Box 10	DEP 34.0 T/DEP 33.9
	35					Pull #5
	36				36.3 —	START 12:25 END 12:50 TIME 25 min DRL 25 min RAN REC 10.0 LOSS ∅ UNACC ∅
	37				Box 11	
	38					
	39					
	40				40.1 —	
	41					
	42				Box 12	
	43					
	44		(CONT)		43.8 —	(CONT)

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PROJECT GALLIPOLIS LOCK & DAM **HOLE NO.** M-5/2

PROJECT GALLIPOLIS LOCK & DAM				INSTALLATION ORH-CD			SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	44		SANDSTONE		Box 13	DEP 44.3 T DED 44.1
	45					PULL #6
						START 1:56 REC 2.7
						END 2:34 LOSS 0
	46					TIME 38min UNACC 0
						DRL 38min
448.0			Bottom Hole		46.8	RAN
	47					DEP - 47.0 T/DEP 46.8
	48					
	49					
	50					

DRILLING LOG	DIVISION OLD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO M-6 STA 13+38B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-611

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 495.8

8. DEPTH DRILLED INTO ROCK 47.4

9. TOTAL DEPTH OF HOLE 448.4

10. SIZE AND TYPE OF BIT 4 V 5 ½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 13

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | **STARTED** 12/6/88 | **COMPLETED** 12/16/88

17. ELEVATION TOP OF HOLE 495.8

18. TOTAL CORE RECOVERY FOR BORING 47.4 %

19. SIGNATURE OF INSPECTOR ZMO

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
495.8			SANDSTONE			PULL #1
	1		LT.GR. M H-H, F-C.g.,			START 1:35
						END 1:55
	2		occ mic, occ THIN BN FRAG.		1	TIME 20min
						DRL 26 min
	3		F-m.g. ABOVE 490.3			RAN 4.9
						REC 4.9
	4		COORSE grained BELOW 490.3		3.8	LOST Ø
						UNRC Ø
	5					DCP 5.0 T/DCP 4.9
490.9			ICL		2	PULL #2
	6		R-BR-S-VES, motten w/			START 2:21 END 2:39
			3P.Sngr. 488.7-488.3 BKN			TIME 13min
488.7	7		488.3-487.9		7.2	DRL 13min LOSS 0.3 RAN 3.0 UNRC 0.3 REC 2.7
	8		SLS GR-Sngr, S-M.H.			T/DCP+DCP 7.9 PULL #3
	9		gradational w/SLd		3	START 2:48
						END 3:05
	10		Top - SC @LED HON. JNNG			TIME 17min
	11		PN w/SLK VEB.C, BKN		10.9	DRL 17min RAN 5.6
	12		487.9-486.7 CA b elow 486.3-			REC 5.6 LOST Ø
	13		481.5 Interbdt gradation		4	UNRC Ø.
	14		w/F.g SS 4823-481.1, BKN		13.5	DCP 13.7 T/DCP 13.5 PULL #4
	15		REC 15-483.9, 479.9-480			START 7:51 END 8:24
479.6	16				5	TIME 33min DRL 33min
	17		SANDSTONE			RAN 10.1
	18				18.3	REC 10.1 LOSS Ø UNRC Ø
	19				6	
	20		(CONT)		(CONT)	(CONT)

PROJECT GALLIPOLIS LOCK + DAM -	HOLE NO. M-611

				ELEVATION TOP OF HOLE 495.8			Hole No. *M-611*	

PROJECT GALLIPOLIS Lock + DAM   INSTALLATION OEH-CP   SHEET Z OF Z SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			PULL #4
	21				6	
	22		GR - LT GR, M. -H, M-		22.1	
	23		FG, MIC, S/S 4778-			
	24		477.2, SH SEAMS 476.6		7	DEPTH/DEP 23.6
	25		476.1, 455.7 -475.8			PULL #5
	26		475.5, 472.7, 462.6		25.5	START 8:40 END 9:04 TIME 24 min DRL 24 min
	27		~ UM MIC, 6H/PNS		8	RAN 10.0 REC 10.0
	28		459.1 = 453.8, 451.9			LOSS Ø UNREC Ø
	29		451.6, 450.0, BLN		29.1	
	30		462.3 - 452.5, FRNC			
	31		454.8 - 454.2		9	
	32					
	32.5				32.5	
	33					T/DEP 33.4 DEP 33.6
	34				10	PULL #6
	35					START 9:23 END 9:45
	36				36.1	TIME 17 min DRL 17 min
	37					RAN 10.0
	38				11	REC 10.0 LOSS Ø UNREC Ø
	39					
	40				39.9	
	41				12	PULL #7 START 10:00 END 10:23
	42					TIME 23 min DRL 23 min
	43					RAN 3.8 REC 3.8
	44	448.9		[BOTTOM OF HOLE 43.6]		43.6 LOSS Ø 13 UNREC Ø 43.6 DEPTH/DEP 47.4

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	Hole No. M-612

SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam
2. LOCATION (Coordinates or Station) Mono M-6 STA 13+10B
3. DRILLING AGENCY W. G. Jaques
4. HOLE NO. (As shown on drawing title and file number) M-612
5. NAME OF DRILLER Dave Harper
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN ∅ 996.2
8. DEPTH DRILLED INTO ROCK +8.9
9. TOTAL DEPTH OF HOLE +17.3

10. SIZE AND TYPE OF BIT 4 75½"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED n/a UNDISTURBED n/a
14. TOTAL NUMBER CORE BOXES 14
15. ELEVATION GROUND WATER n/a
16. DATE HOLE STARTED 12/5/89 COMPLETED 12/20/89
17. ELEVATION TOP OF HOLE 996.2
18. TOTAL CORE RECOVERY FOR BORING 98 %
19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
996.2			SANDSTONE			PULL #1
	1		GR-LT.GR, M.H-H, M-CG.			START 3:01
						END 3:19
	2		Sh. seams 996.0-995.9,		1	TIME 18 min
						DRL 18 min
	3		995.8-995.6, 995.5-995.4			RAN 9.1
						REC 9.1
	4		BKN PNS spacing 0.1		3.7	LOSS ∅
						UNACC ∅ T/DEP 9.1
	5		162.2-995.1 N.U.M.			DEP 9.5 PULL #2
						START 3:30
	6		Thin Sh+CL Stringers		2	END 3:40 TIME 10 min
						DRL 10 min
	7		+Frags 491.1-490.3			RAN 9.7
					7.9	REC 4.8
	8					LOSS ∅
	9				3	UNACC ∅ T/DEP 8.8
						PULL #3
985.9	10					START 3:59 END 4:09 DEP 9.9
						TIME 10 min
	11		SLS		10.9	DRL 10 min RAN 2.5
			GR-GN-GR, S-M.H., Shaley			REC 2.3
	12		scorely BKN W/FATTY			LOSS 0.1
			CL LTGR, 485.9-985.8		4	UNACC 0.1 DEP 11.8
	13		BKN CLS W/FATTY CL, LT			PULL #4 START 7:30
			GR. S., V.S.S 985.3-985.9			END 7:38 DEP 13.0
	14		BKN 483.0-982.6 W/ANG		19.0	TIME 8 min DRL 8 min
			PN ~30.0			RAN 1.7 REC 1.7
982.2	15					LOSS ∅ UNACC ∅
			CLS		5	PULL #5 START 8:00
	16		LTGR, S-V.S.S., occ Thin Fatty			END 8:18
			CL, seams, Interbdd SLS			TIME 18 min DRL 18 min
	17		LTGR, S; Sh. 980.8-980.7, 980.1			RAN 5.0 REC 5.0
			980.0 SLS/FATTY CL 478.3 978.8		17.6	LOSS ∅ UNACC ∅
978.2	18		Scorely BKN 978.6-978.3			DEP 18.0
			SLS		6	PULL #6
	19		GR, M.H, SC, GRADATIONAL			START 9:00 END 9:28
976.2	20		SS W/depth, Shaleve 977.7		(cont)	TIME 28 min
			BKN 977.7-977.6			(CONT)

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PROJECT Gallipolis Lock+Dam   HOLE NO. M-612

| PROJECT GALLipolis Lock + DAM | | | INSTALLATION DEH-CD | | | SHEET 2 OF 3 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #6
	21		GR-LT.GR, M. H. F. M.G.		21.0	DRL 28min
						RAN 9.9
	22		MIC, SLT-F.G. 9729-4705,			REC 10.0
						LOSS 0
	23		OCC. PYR. NON 968.2-966.6		7	UNACC 0
	24		NON BAND OF F MIC			
	25		IRI PAIS. 998.3, 997.9		24.8	
	26					
	27				8	
	28					T/DCP 27.7 DCP 28.0
					28.9	PULL #7
	29					START 9:50
	30					END 10.07
					9	TIME 17min
	31					DRL 17min
	32					RAN 10.5
					30.0	REC 9.6
	33					LOSS 0
						UNACC 0
	34				10	
	35				35.7	
	36					
	37				11	T/DCP 37.3
	38					DCP 37.9
						PULL #8
	39				39.2	START 10:28
	40					END 10.40
						TIME 12min
	41				12	DRL 12min
						RAN 10.0
	42					REC 9.0
						LOSS 0
	43				42.7	UNACC 0
					13	
	44		(CONT)			(CONT)

ELEVATION TOP OF HOLE				496.2	**Hole No.** M-6/2	

PROJECT GALLipoLis LocK + DAm

INSTALLATION ORH-CD

SHEET 3'
OF 3 **SHEETS**

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV-ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	44		SANDSTONE			PULL#8
	45				13	
	46				46.2	
	47					T/D/P 46.6
	48				14	DEP 47.6 PULL#9
447.3	49		Bottom Hole		48.9	START 11.15 T/D 48.9
	50					END 11.28 DEP 49.3
	51					TIME 13 min
	52					DRL 13 min
	53					RAN 2.7
						REC 2.3
						LOSS 0
						UNACC 0

DIVISION	INSTALLATION	SHEET /
OPD	ORH-CD	OF 2 SHEETS

1. PROJECT 6Allipolis Lock + DAm

10. SIZE AND TYPE OF BIT 4 X 5½

2. LOCATION (Coordinates or Station) Mono m-7 STA 13+00 13

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) M-7/1

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED N/A   UNDISTURBED N/A

5. NAME OF DRILLER DAVE HARPER

14. TOTAL NUMBER CORE BOXES 12

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 12/17/88   COMPLETED 12/17/88

7. THICKNESS OF OVERBURDEN Ø 496.5

17. ELEVATION TOP OF HOLE 496.5

8. DEPTH DRILLED INTO ROCK 42.7

18. TOTAL CORE RECOVERY FOR BORING 42.7

9. TOTAL DEPTH OF HOLE 453.8

19. SIGNATURE OF INSPECTOR JMW

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5			SLS			Pull #1
495.6			GR. S. Intrbdd /SS BKW 4965-4962			START 11.05
	1		SANDSTONE			END 11.25
	2		gR-LT.gR, m.H-H., cg		1	TIME 20 min
			Occ sh STRingers + Frags			DRL 20 min
	3		491.8 - 492.7, mg. 490.7-			RAN 5.0
			490.9 CL coot PW @			REC 5.0
	4		490.7		3.7	LOSS Ø
	5					UNACC Ø
490.5						DEPTH/DEP 5.0
						Pull #2
	6		ICL		2	START 12:09
			R. BR, s, mottled w/gR-			END 12:39
	7		gN, cL, gR. 490.9 - 490.5			TIME 25 min
	8		securely BKW 490.8-490.9		7.9	DRL 25 min
			securely mech BKW w/			RAN 3.9
			0.2 Loss 487.8 - 487.3, Ang			REC 3.7
	9		pw s ~30° w/slk 489.8 489.7			LOSS 0.2
			489.4 -489.3, 489.2 - 489.1,			UNACC 0.2 T/Dep 9.7
486.3			489.1 -489.0 SLS nod 488.0		3	DEP 8.9 Pull #3
						START 12:50
			SLS			END 12:57
	11		gR - gN. gR, s. m.H.			TIME 7 min
						DRL 7 min DEP 10.2
	12		SS gR. mg., m.H. 486.1-		10.9	RAN 1.8
						REC 1.5
	13		485.9 BKW 485.5 -485.6			LOSS Ø
						UNACC Ø
	14		Icl w/sht nod sH/BKN			Pull #4
					4	START 1:12
	15		489.6-489.0 REDRILL		12.7	END 1:18
						TIME 6 min
	16		486.1 - 489.0			DRL 6 min
						RAN 3.3
	17					REC 3.9
						LOSS Ø
	18				14.3	UNACC Ø DEP 13.6
478.2						Pull #5
					5	START 1:39
	19		SANDSTONE			END 1:53
						TIME 14 min
	20		cont		18.0	DRL 14 min
						RAN 5.5
						REC 5.5
						LOSS Ø
						UNACC Ø
					6 (CONT)	DEP 19.3 T/Dep P.L
						Pull #6

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PROJECT	HOLE NO.
6Allipolis Lock + DAm	M-7/1

| PROJECT Gallipolis Lock + Dam | INSTALLATION ORH-CD | | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			PULL#6
	21					START 2:08
			GR-LT GR., M.H, F-M.g.			END 2:28
	22					TIME 20min
			Occ, mic, occ x-Bd			DRL 20min
	23					RAN 9.7
			SLT 976.5-976.0, SL.FRAG			REC 9.5
	24					LOSS Ø
			475.7, BKN 475.9-475.5			UNACC Ø
	25					
			Num SL FRAG + STRINGERS			
	26					
			465.6-465.2, white-marl.			
	27					
			CALcite 463.2-962.9			
	28					
			num mic Ld/pns 459.6			
	29					DEP+T/D=029.2
						PULL#7
	30					START 2:49
						END 3:09
	31					TIME 20min
						DRL 20min
	32					RAN 10.1
						REC 10.1
	33					LOSS Ø
						UNACC Ø
	34					
	35					
	36					
	37					
	38					
	39					T/D=35.1
						DEP 39.3
						PULL #8
	40					START 3:23
						END 3:35
	41					TIME 12min
						DRL 12min
	42					RAN 3.4
453.8			BOTTOM HOLE			REC 3.4 / DEP+T/D 42.7
	43					LOSS Ø
						UNACC Ø
	44					

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DIVISION	INSTALLATION	SHEET,
ORD	OEHCD	OF 2 SHEETS

1. PROJECT
Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4YSV₂

2. LOCATION (Coordinates or Station)
MONO M-7 STA 12+59 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
M.S.L.

3. DRILLING AGENCY
W.G. JAGUES

12. MANUFACTURER'S DESIGNATION OF DRILL
B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) M-7/2

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER
DAVE HARPER

14. TOTAL NUMBER CORE BOXES 13

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE	STARTED 12/20/88	COMPLETED 12/21/88

7. THICKNESS OF OVERBURDEN ∅ 497.2

17. ELEVATION TOP OF HOLE 497.2

8. DEPTH DRILLED INTO ROCK 45.2

18. TOTAL CORE RECOVERY FOR BORING 44.7 %

9. TOTAL DEPTH OF HOLE 452.0

19. SIGNATURE OF INSPECTOR IMN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			SANDSTONE			Pull #1
	1		gr - lt.gr m.h.-h, m.cg.		1	START 12.41
					1.6	END 12:54
	2		occ mic FeSTained			TIME 13 min
						DRL 13 min
	3		Del PN 498 B			RAN 3.8
						REC 3.9
	4				2	LOSS ∅ T/Dep 3.9
						UNACC ∅
	5					DEP 5.0
						Pull #2
	6					START 1.10
						END 1.15
	7				6.8	TIME 5 min
						DRL 5 min
	8					RAN 4.3
					3	REC 4.2
						LOSS ∅ T/D-P&I
						UNACC ∅
	9					DEP 8.5
						Pull #3
						START 1.26
	10					END 1.33
					10.3	TIME 7 min
	11					DRL 7 min
						RAN 4.7
						REC 4.5
	12					LOSS ∅
489.9					4	UNACC ∅
	13		CLS			DEP & T/D-P 12.8
			LT.gr, S.UES., inter bdd			Pull #4
	14		w/FATTy cl.		13.9	START 1.48
						END 2:05
	15					TIME 17 min
486.5						DRL 17 min
	16		SLS		5	RAN 5.0
			gr - gn gr., s-m.h, gradation			REC 5.0
	17		w/sh @ Top Tosa @ BoTTom			LOSS ∅
			8 kn pns w/0.3 spacing w/			UNACC ∅
	18		cl s=rms, Ans pn 30° 481.6		17.6	T/D-P 18.6
			-481.5 Thin cl s=rm 481.3			DEP 18.0
	19		481.2, 481.0, 480.5, 480.2		6 (cont)	Pull #5
			479.9, 479.7, 479.2, 477.9			START 2.55
	20		477.6 (cont)			END 3.11
						TIME 12 min
						DRL 12 min

PROJECT	HOLE NO.
Gallipolis Lock + Dam	M-7/2

| | | | | PROJECT GALLIPOLIS LOCK & DAM | INSTALLATION O RH-CD | | | |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		6	PULL #5
			CLS LTGR. 479.5-479.3			RAN 9.3
	21		mech BKN 479.2-978.8		20.9	REC 9.3
						LOSS Ø
						UNREC Ø
	22					T/DEP 22.0
479.8						DEP 22.5
			SANDSTONE		7	PULL #6
	23					START 7:45
			GR-LTGR, M, H, F-M, Si			END 7:59
	24					TIME 14 min
			mic, occ Y-Bd, Few		24.5	DRL 14 min
						RAN 9.9
	25		Sm, PYR wod 472.1-469.4			REC 9.9
						LOSS Ø
	26		lewing. Sh BN ON 20° 466.1		8	UNREC Ø
	27		- 466.2 occ Sm. Sh Fine			DEP 26.8 T/DEP 26.7
						PULL #7
	28		465.6-464.6 num hor		27.9	START 8.13
						END 8.33
	29		mic bd pns 485.5-985.0			TIME 20 min
					9	DRL 20 min
	30		455.8-953.7 cal.cem.			RAN 3.4
						REC 9.4
	31		lewse 457.8-452.7			LOSS Ø
					31.6	UNREC Ø
	32					
	33				10	
	34					
	35				35.1	
	36					D-P 35.8
						DEP 36.2
					11	PULL #8
	37					START 8.55
	38					END 9.25
					38.6	TIME 30 min
	39					DRL 30 min
	40				12	RAN 9.0
						REC 8.5
	41					LOSS Ø
						UNREC Ø
	42				42.2	
	43				13	
452.5	44	44.7	Bottom Hole 49.7		44.7	T/DEP 43.7
						DEP 49.5

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1. PROJECT Gallipolis Lock + Dam			**10. SIZE AND TYPE OF BIT** 4 x 5½		
2. LOCATION (Coordinates or Station) MONO M-8 STA 12+99 B			**11. DATUM FOR ELEVATION SHOWN (TBM or MSL)** M.S.L.		
3. DRILLING AGENCY W.G. JAQUES			**12. MANUFACTURER'S DESIGNATION OF DRILL** B.-57 MOBILE		
4. HOLE NO. (As shown on drawing title and file number) M-8/1			**13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN**	**DISTURBED** N/A	**UNDISTURBED** N/A
5. NAME OF DRILLER DAVE HARPER			**14. TOTAL NUMBER CORE BOXES** 12		
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.			**15. ELEVATION GROUND WATER** N/A		
			16. DATE HOLE	**STARTED** 12/19/88	**COMPLETED** 12/19/88
7. THICKNESS OF OVERBURDEN Ø 496.8			**17. ELEVATION TOP OF HOLE** 496.8		
8. DEPTH DRILLED INTO ROCK 42.8			**18. TOTAL CORE RECOVERY FOR BORING** 42.8 %		
9. TOTAL DEPTH OF HOLE 454.0			**19. SIGNATURE OF INSPECTOR** LMN		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
496.8			SANDSTONE			PULL #1
	1		GR-LT.GR, M.H-.H, M-			START 7:37
						END 7.95
	2		C.G, Thin ch S-Nin 499.8-		1	TIME 8 min
						DRL 8 min
	3		493.8, C.M.G Interbdd'd			RAN 5.0
						REC 5.0
	4		492.9 + med below, Fe		3.6	LOSS 0
						UNACC 0
	5		Surface stain 496.8-496.5 Nun			DEP+T/DEP 5.0
					2	PULL #2
490.6	6		Sh Frag + Stringers 493.2-492.9			START 7:56
			ICL			END 8:10
	7		R.BR, S, mod H w/ GR-GN GE		7.1	TIME 14 min
			CL, occ SLKS, LT GR ABOVE			DRL 14 min LOSS 0.1
	8		489.2, ANG PN 20° W/SLK			RAN 3.6 UNACC 0.1
			489.6 - 489.7, 489.0, 488.9			REC 3.5
	9		487.7 severely mech BKN		3	DEP+T/DEP 8.6
			488.2 -487.8 BKN 486.0			PULL #3
	10					START 8:23
						END 8.90
	11				10.5	TIME 17 min
						DRL 17 min
484.7	12					RAN 4.9
			SLS		4	REC 4.9
	13		GR-GN.GR, S-M.H,			LOSS 0
						UNACC 0
	14		GRADATIONAL W/SH @			DEP 13.6 T/D→13.5
					13.1	PULL #4
	15		Top Ts SQ @ Bottom,			START 8.45
						END 8.56
	16		redrill 483.3-482.9, SQ		5	TIME 11 min TDEP 13.0
						DRL 11 min DEP 13.2
	17		Below 478.2			RAN 1.5
						REC 1.5
	18				17.6	LOSS 0
						UNACC 0
	19				6 (CONT)	PULL #5
						START 9:14
	20		(CONT)			END 9:35
						(CONT)

PROJECT							SHEET 2
GALLIPOLIS LOCK + DAM			INSTALLATION ORH-CD				OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.6	20		SLS			
	21		SANDSTONE		6	PULL #5
					21.1	TIME 21 min
	22		SH - LT. GR, MD.H, M-			DRL 21 min
						RAN 9.7
	23		F.G., MIC, GRADATIONAL		7	REC 9.7
						LOSS 0
	24		CONTACT W/UPPER SLS			UNACC 0
	25		OCC X BD', SLT 475.9 - 475c		24.7	T/DEP 29.3 DEP 29.7
	26		W/ IN THIN SLS TAPERS			PULL #6
						START 9.51
	27		475.2 - 473.7		8	END 10.09
						TIME 18 min
	28				28.3	DRL 18 min
						RAN 10.0
	29					REC 10.0
	30				9	LOSS 0
						UNACC 0
	31					
	32				32.1	
	33					
	34				10	
	35					DEP 34.7 T/DEP 34.6
						PULL #7
	36				35.7	START 10:26
						END 10.46
	37					TIME 20 min
						DRL 20 min
	38				11	RAN 10.0
						REC 10.0
	39					LOSS 0
					39.5	UNACC 0
	40					
	41				12	
	42					
454.0			BOTTOM HOLE		42.8	DEP+T/DEP 42.8
	43					
	44					

DRILLING LOG	DIVISION OCD	INSTALLATION ORH=CD	SHEET / OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO M-8 STA 12+10 B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-8/2

5. NAME OF DRILLER DAVE HARPER

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.7

8. DEPTH DRILLED INTO ROCK 49.3

9. TOTAL DEPTH OF HOLE 452.4

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 13

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/22/88 COMPLETED 12/22/88

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING 49.3

19. SIGNATURE OF INSPECTOR J.M.B.

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE			PULL #1
	1		GR-LTGR M.H-H. F.CG., OCC			START 9:57
	2		MIC, SLT-FG. 493.5-493.0		1	END 10:06
						TIME 9min
			Thin clStringers 492.0, 486.8			DRL 9min
	3					RAN 4.8
			GRADATIONAL ZONES FINING		3.7	REC 4.6
	4		UPWARD 493.5, 489.3, 489.2			LOSS 0.2
						UNREC 0.2
	5		ww,mic, Bd pns 488.2 -			DEP+T/DEP 4.8
						PULL #2
			483.1, 487.1-487.2		2	START 10:20
	6					END 10:30
						TIME 10min
	7				7.0	DRL 10min
						RAN 4.3
	8				3	REC 4.5
						LOSS Ø UNREC Ø
	9					DEP+T/DEP 9.1
						PULL #3
	10					START 10:45
					10.5	END 11:00
	11					TIME 15min
						DRL 15min
	12				4	RAN 4.7
484.2						REC 4.3
	13		SLS			LOSS Ø
						UNREC Ø T/DrP 13.1
			GR-GN,GR., S-M.H		13.8	DEP 13.8
	14		GRADATIONAL w/sh @ TOP			PULL #4
						START 11:20
	15		TO SS @ BOTTOM, BKN,pns		5	END 11:35
			w/12 SPACING Cl COOTing.			TIME 15min
	16					DRL 15min
					16.6	RAN 4.9
	17		Interbdd cls 483.5-483.4, 483.2			REC 4.9
					C	LOSS 0.2
	18		-483.0, 481.9-481.8, 481.6-481.5			UNREC 0.2
						DEP+T/DrP 18.0
	19		480.9-950.7, 479.0,-478.9, cl			PULL #5
			SEAM 482.3, 480.3, 477.9, BKN			START 12:20
	20		CONT		19.7	END 12:40
					7	TIME 20min

PROJECT GALLIPOLIS LOCK + DAM	HOLE NO. M-8/2

PROJECT GALLIPOLIS LOCK + DAM	INSTALLATION ORH-CD	SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS			PULL #5 / DRL 20min / RAN 4.6 / REC 4.1 / LOSS Ø
	21		Sa below 477.8			
479.8	22				7	UNACC Ø T/DEP 22.0
			SANDSTONE			D=P 22.6 / PULL #6 / START 1.00 / END 1.07
	23		Ge - LTgR., M.H. M.-Fg.			TIME 7min
	24		mic., SLT - F.g 473.9		29.2	DRL 7min / RAN 3.3 / REC 3.3 / LOSS Ø
	25		- 475.6, LOW ANg DNS 20°			UNACC Ø
	26		473.2, 473.3, 973.6, 465.9		8	D=P 25.9 T/DEP 25.8 / PULL #7
	27		P.4P WD# 472.0, sh L-NSE			START 1.30 / END 1.50
	28		471.5 - 471.9 SL STR-NGER		27.8	TIME 20min / DRL 20min / RAN 7.9
	29		470.9, 462.2, NUM, mic			REC 9.9 / LOSS Ø
	30		En c# (BANds) 469.2-467.2		9	UNACC Ø
	31		453.6 - 459.4, 956.8 - 956.7		31.5	
	32		454.1 - 954.3, 9523 - 453.7			
	33				10	
	34					
	35				34.8	T/DEP 35.2
	36				11	D=P 35.6 / PULL #8 / START 2.15
	37					END 2.30 / TIME 15min / DRL 15min
	38				38.1	RAN 7.6 / REC 9.5 / LOSS 3.1
	39					UNACC 3.1
	40				12	
	41					
	42				41.7	
	43				13	
452.7	44		497 BOTTOM HOLE		49.3	D=P 45.2 T/DEP 45.2

DRILLING LOG	DIVISION OPD	INSTALLATION OP4-CD	SHEET 1 OF 2 SHEETS

1. PROJECT	10. SIZE AND TYPE OF BIT
GALLIPOLIS LOCK+DAM	4×5V,
2. LOCATION (Coordinates or Station)	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
MONO M-9 STA 12+00 B	M.S.L.
3. DRILLING AGENCY	12. MANUFACTURER'S DESIGNATION OF DRILL
W.G. JAQUES	B-57 MOBILE
4. HOLE NO. (As shown on drawing title and file number) M-9/1	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN / DISTURBED N/A / UNDISTURBED N/A
5. NAME OF DRILLER	14. TOTAL NUMBER CORE BOXES 13
TICE / HARPER	15. ELEVATION GROUND WATER N/A
6. DIRECTION OF HOLE ☑VERTICAL ☐INCLINED ____ DEG. FROM VERT.	16. DATE HOLE STARTED 12/19/88 / COMPLETED 12/19/88
7. THICKNESS OF OVERBURDEN E 496.8	17. ELEVATION TOP OF HOLE 496.8
8. DEPTH DRILLED INTO ROCK 44.1	18. TOTAL CORE RECOVERY FOR BORING 44.1
9. TOTAL DEPTH OF HOLE 452.7	19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			SANDSTONE			PULL #1
	1		GR-LT.GR., M-C.G, H.		1	START 11.21 END 11.35 TIME 14min DRL 14min RAN 5.0 REC 4.7 LOSS 0 UNACC 0
	2		M.G. +MIC ABOVE 493.0			
	3		C.G. W/OCC THIN SH +CL		3.7	
	4		FRAG +STRINGERS 6-10W 493.0, SURFACE STAINED			
	5		496.8-496.6, SHALY			DEP 5.0 T/DEP 4.7
	6		STRINGERS 495.8, 494.9		2	PULL #2 START 11.41 END .51 TIME 10min DRL 10min RAN 3.7
	7				7.2	REC 3.7 LOSS 0 UNACC 0
489.2						DR D 8.6 T/DEP 8.4
	8		ICL R.BR, S, MOTTLED W/			
	9		GR-GN.GR CL, LT.GR.		3	PULL #3 START 12:31 END 12.44 TIME 13min DRL 13min
	10		489.2-488.7 W/FATTY CL			RAN 5
	11		489.1-489.0 BKN 488.4-488.1		10.7	REC 3.5 LOSS 0
485.2			BKN 486.3-486.1			UNACC 0 T/DEP 11.4
	12		SLS		4	
	13		GR-GN, GR, M.H,			
	14		GRADATIONAL W/SH		14.1	DEP 13.6 PULL #4 START 12:51
	15		@ TOP TO SA @ BOTTOM REDRILL 484.9-483.2			END 1.06 TIME 12min DRL 12min RAN 5.7
	16		HIGH ANG DWS W/SLK		5	REC 7.2 LOSS 0
	17		483.1-482.5, 482.7-482.3 481.6-481.5, SA BELOW			UNACC 0
	18		477.6 W/OCC GRADATIONAL		17.8	
	19		F.G. S.S.		6 (CONT)	DEP+T/DEP 19.3
	20		(CONT)			PULL #5 (CONT)

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DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE	496.8			Hole No. M-9/1	

PROJECT GAllipolis Lock+Dam   **INSTALLATION** ORH CD   **SHEET** 2 **OF** 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.1	20		SLS		6	PULL#5
	21		SANDSTONE		21.0	START 1:21
	22		gR - LT. gR. F. - m.g, m.H			END 1:37 TIME 16 min DPL 16 min
	23		mic, occ r. bedded		7	PAN 10.0 PEC 10.0
	24		Sh scam: 479.2 - 479.1		24.5	LOSS Ø UNACC Ø
	25		473.6 - 473.5			
	26				8	
	27					
	28				28.2	
	29					DCP + T/DCP 29.3 PULL#6
	30				9	START 1:56
	31				31.5	END 2:19 TIME 18 min DCL 18 min
	32					PAN 10.0 PEC 10.0
	33				10	LOSS Ø UNACC Ø
	34					
	35				35.1	
	36					
	37				11	
	38					
	39				38.8	DCP + T/DCP 39.3 PULL#7
	40				12	START 2:31 END 2:46
	41					TIME 15 min DRL 15 min PAN 9.8
	42				42.3	PEC 4.8 LOSS Ø
	43				13	UNACC Ø
452.7	44.1		44.1 BOTTOM HOLE		44.1	DCP 44.3 T/DCP 44.1

ENG FORM 1836-A
AM 67   (ER 1110-1-1801)   GPO 1980 OF - 628-603

PROJECT GAllipolis Lock+Dam   **HOLE NO.** M-9/1

DRILLING LOG	DIVISION OED		INSTALLATION OR HCD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono M-9 STA. 11+60B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-9/2

5. NAME OF DRILLER Steve Frye

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 496.8

8. DEPTH DRILLED INTO ROCK 42.8

9. TOTAL DEPTH OF HOLE 454.0

10. SIZE AND TYPE OF BIT 4 X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 12

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/27/88 COMPLETED 12/27/88

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 42.8

19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			SANDSTONE			Pull #1
	1		GR-LT.GR, M.H-H, M.C.G.			START 7:31
						END 7:49
			OCC. MIC. Fe SURFACE			TIME 11min
	2					DRL 11min
			STAIN 496.8-996.7, BKN		1	RAN 4.5
						REC 4.5
	3		PNS W/0.25 SPACING 496.8			LOSS 0
						UNACC 0
	4		-493.8, COL, CEM. 495.4		3.8	
						DED+T/DED 4.5
	5		-495.1, C.G. 493.8-987.6			Pull #2
						START 8:09
			N F MICOUS + BELOW		2	END 8:15
	6					TIME 6min
			NUM THIN SH STRINGERS			DRL 6min
	7					RAN 3.8
			492.0, 491.9, 490.9-490.8		7.3	REC 3.8
						LOSS 0
	8					UNACC 0
						DED+T/DED 8.3
	9				3	Pull #3
						START 8:30
						END 8:49
	10					TIME 19min
						DRL 19min
					10.9	RAN 5.0
	11					REC 5.0
						LOSS 0
	12					UNACC 0
483.9					4	
	13		SLS			DED+T/DED 14.9
			GR, S.-M.H, SA, C/S SEAM			Pull #4
	14		483.6-983.5, Fe STAINED high		14.9	START 8:59
						END 9:15
	15		ANG, FRAC, 483.5-982.0			TIME 16min
						DRL 16min
	16		SS. GR, M.H, Fg. 481.6-981.1		5	RAN 4.4
						REC 3.3
	17		476.9-976.1, BKN W/COR WG			LOSS 0 T/DED 16.9
						UNACC 0
	18		LOSS 479.6-979.2, THIN CS		18.0	DED 17.7
			SEAM 977.0 SEVERELY BKN			Pull #5
	19		PIECE 476.5-476.4, BKN		6 (CONT)	START 9:35
						END 9:52
	20		476.1-475.5 (CONT)			TIME 17min
						DRL 17min
						(CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Lock + Dam   HOLE NO. M-9/2

	ELEVATION TOP OF HOLE					Hole No. M-9/2	
	496.8						

PROJECT: GALLIPOLIS LOCK + DAM
INSTALLATION: ORH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
475.9	20		(CONT) SLS		6	PAN 9.7 PULL #5
						REC 3.7 T/DEP 20.5
	21		SANDSTONE			LOSS Ø
						UNACC Ø
			GR-LT.GR., MH, F-M.g		21.4	DEP 21.3
	22					PULL #6
			MIC, SM PYR. NOD			STAR 10:10
						END 10:25
	23		474.3-973.9, 970.2-969.9			TIME 15MIN
						DRL 15MIN LOSS Ø
	24		SM. CAL. CEM. NOD 973.0		7	PAN 3.9 UNACC Ø
						REC 3.9
			MECH FRAC 463.3-913.0			DEP+T/DEP 23.7
	25				25.1	PULL #7
			NUM THIN MIC BD PNS			STAR 10:45
	26					END 11:05
			(BAND) 462.9, 956.2-956.1			TIME 20MIN
	27					DRL 20MIN
			455.9			PAN 10.3
					8	REC 10.1
	28					LOSS Ø
						UNACC Ø
	29				28.9	
	30					
	31					
					9	
	32					
	33				32.7	
	34					DEP 34.0 T/DEP 33.8
						PULL #8
	35				10	START 11:25
						END 12:05
	36					TIME 40MIN
					36.0	DRL 40MIN
	37					PAN 8.7
						REC 8.4
	38					LOSS Ø
						UNACC Ø
	39					
					39.7	PULL #9
	40					START 12:50
						END 1:00
	41					TIME 10MIN
						DRL 10MIN
	42					PAN 0.6
						REC 0.3
454.0			Bottom Hole			LOSS Ø
	43					UNACC Ø DEP 42.5
					42.9	DEP+T/DEP 42.8
	44					

ENG FORM 1836-A (ER 1110-1-1801)
AUN 67
GPO 1960 OF-828-603

PROJECT: GALLIPOLIS LOCK+DAM
HOLE NO. M-9/2

DRILLING LOG	**DIVISION** ORD	**INSTALLATION** OEH-LD		**SHEET 1** **OF 2 SHEETS**

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO M-10 STA 11+50 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-10/1

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE ☑VERTICAL ☐INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.9

8. DEPTH DRILLED INTO ROCK 44.7

9. TOTAL DEPTH OF HOLE 452.2

10. SIZE AND TYPE OF BIT 3 X 5 V2

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 13

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/19/88 | COMPLETED 12/20/88

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 44.7 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE			PULL #1
	1		SR-Lt.gr., M.-H-H, m-cg.		1	START 3:26 / END 3:31 / TIME 11min / DRL 11min
	2		mic Fe surface stained			RAN 4.6 / REC 4.6
	3		496.9-496.8 BKDNS 496.5-960		3.9	LOSS Ø / UNACC Ø
	4		CONGLOMERITE 493.2-492.9			
	5		CL SEAM 492.5 bkn sh seam		2	T/DEP 4.6 / DEP 5.0 / PULL #2 / START 3:40 / END 3:49
	6		492.9-492.3, sh, seam / 490.5-490.9			TIME 9min / DRL 9min
490.2	7		ICL	6.8		RAN 3.7 / REC 3.7 UNACC Ø
	8		R-BR, S, mottled w/ gr+gn cl, SEV-HLy bkn w Fatty cl 490.2-490.1		3	LOSS Ø / DEP 8.9 / T DEP 8.3 / PULL #3 / START 7:08 / END 7:23
	9		LT gr 490.2-489.5 BKN 488.6-488.9 ang pn 30° 488.1-478.9, 487.7-487.5		9.9	TIME 15min / LOSS Ø / UNACC Ø
486.6	10		987.6-987.9, severely bkn 487.3-487.1			DRL 15min / RAN 2.9 / REC 2.5 T/DEP 10.7 / DEP 11.2
	11		SLS / gr-gn, gr, s-mlH gradational w/sh		4	PULL #4
	12		at top to sand @ bottom, kkn pns spacing 0.5 bkn 486.6			START 7:31 / END 8:01 / TIME 30min
	13		486.1, shale seam 478.9-478.5, sandstone		13.1	DRL 30min / RAN 8.6 / REC 8.5
	14		LT gr, M.H, F.9. 477.9-477.6			
	15				5	LOSS Ø / UNACC Ø
	16					
	17				16.9	
	18				6	
	19					DEP+T/DEP 19.3
	20					PULL #5 (cont)

ENG FORM 1836
MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Lock + Dam | **HOLE NO.** M-10/1

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 496.9				Hole No. M-10/1	
PROJECT GALLipolis LocK + DAM			INSTALLATION OEH-CD			SHEET 1 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		20.2	Pull #5
	21					
	22				7	START 8:12 END 9:10 TiME 58min DRL 28min RAN 9.17 REC 9.7 LOSS Ø
474.3					24.0	UNACC Ø
	23		SANDSTONE			
	24		GR-LTGR, MN, F-M.g			
	25		mic, occY. Bd, gradational			
	26		CONTACT w/upper SLS		8	
	27		occ small, scattered			
	28		pyrite nodules:		27.0	
			472.5-469.1, vom. mic			
			Bd pins 455.9, 452.4			
	29				9	Dep 29.3 T/Dep 29.0
	30					Pull #6
	31				31.2	START 9:18 END 9:40 TiME 22min
	32					DRL 22min RAN 10.0 REC 10.0
	33				10	LOSS Ø UNACC Ø
	34					
	35				34.9	
	36				11	
	37					
	38				38.6	
	39					Dep 39.3 T/Dep 39.0
	40				12	Pull #7 START 10:04 END 10:17
	41					TiME 13min DRL 13min RAN 5.7
	42				42.3	REC 5.7 LOSS Ø
	43				13	UNACC Ø
452.2	44		Bottom HoLE 44.7		44.7	Dep + T/Dep 44.7

PROJECT GALLipolis Lock + DAM	HOLE NO. M-10/1

DRILLING LOG	DIVISION OPD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono M-10 STA 11+08 B

3. DRILLING AGENCY W. G. Jaoues

4. HOLE NO. (As shown on drawing title and file number) M-10/2

5. NAME OF DRILLER Dave Harper

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 496.7

8. DEPTH DRILLED INTO ROCK 45.7

9. TOTAL DEPTH OF HOLE 451.0

10. SIZE AND TYPE OF BIT 4 X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 13

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/27/88 COMPLETED 12/27/88

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING 45.7

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE gr-Lt.gr, m.H-H, m-c.g. Bkn pns w/0.3 spacing 496.7-499.9, col-crm 495.7 492.9, c.g. w/occ.sm, cl frag +stringers 491.9 -491.1, occ.sm, cl frag 489.8-487.5, mech chipped 488.5-488.3		1 3.7	PULL #1 START 1:40 END 2:00 TIME 20 min DRL 20 min RHN 4.3 REC 4.3 LOSS 0 UNACC 0 DEP+T/DEP 4.3 PULL #2 START 2:05 END 2:15 TIME 10 min DRL 10 min RHN 4.6 REC 4.6 LOSS 0 UNACC 0
					2 7.5	
487.8			SLS gr, m.H, sa cl lense 486.1-486.0		3	DEP+T/DEP 8.9 PULL #3 START 2:26 END 2:37 TIME 11 min DRL 11 min RHN 9.8 REC 5.1 LOSS 0 UNACC 2
486.0			SANDSTONE gr-Lt.gr, m.H, f-m.g. occ, mic col crm 484.6-481.6		11.2 4	
481.6			SLS gr-s. m.H, grational w/sa top sa bottom. cl gr, s, seams 481.6- 481.5, 481.3-481.1		14.5 5	DEP+T/DEP 13.7 PULL #4 START 2:55 END 3:15 TIME 20 DRL 20 RHN 6.5 REC 6.3 LOSS 0 UNACC 0
480.9			SANDSTONE gr-Lt.gr, m.H, f-m.g. occ mic, slt - 496.7-476.4		18.2 6 (Cont)	
	20					T/DEP 20.0

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock + Dam HOLE NO. M-10/2

| PROJECT GALLiPOLis LOCK+DAM | INSTALLATION OPH-CD | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	DEP 20.2 PULL#5
	21		Few, occ, sm. pyr. nod		21.3	START 3.45
	22		475.4-474.8, Thin calcite			END 4:14 TiME 20min
	23		Filled veins 468.2-468.1		7	DRL 29min RAN 9.3
	24		Slightly mech Bkn			REC 9.1 LOSS 0
	25		467.2 - 467.1		25.0	UNACC 0
	26		Thin sh stringers 466.3- 465.9 , cal cem 463.1-461.2			
	27		456.2-457.0.		8	
	28					
	29				28.8	DEP 29.5 T/DEP 29.8
	30				9	PULL #6
	31					START 4.34 END 4.55 TiME 21 min
	32				31.9	DRL 21min RAN 8.1
	33	·			10	REC 8.3 LOSS 0
	34					UNACC 0
	85				35.4	
	36					
	37				11	
	38					T/DEP 37.7
	39				38.8	DEP 38.9 PULL #7
	40					START 5.20 END 5.27 TiME 7min
	41				12	DRL 7min RAN 9.0 REC 8.0
	42					LOSS 0 UNACC 0
	43				13	
451.0	44		BoTTom HoLE 45.7		45.7	DEP 45.8 T/DEP 45.7

| PROJECT 6ALLipolis LoCk+DAm | HOLE NO. M-10/2 |

DRILLING LOG	DIVISION OPD	INSTALLATION OPH-CB	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO M-11 STA 10+98R

3. DRILLING AGENCY W. G. Jaoues

4. HOLE NO. (As shown on drawing title and file number) M-11/1

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.1

8. DEPTH DRILLED INTO ROCK 484

9. TOTAL DEPTH OF HOLE 452.7

10. SIZE AND TYPE OF BIT 4 x 5 1/2

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 13

15. ELEVATION GROUND WATER N/A

16. DATE HOLE — STARTED 12/20/88 — COMPLETED 12/20/88

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 99.1 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SANDSTONE			Pull #1
	1		GR-LT GR, M.G.G, M.H-H.			START 11:02
			OCC MIC, FE SURFACE STAIN		1	END 11:12
	2		497.1-496.9, BKN PWS -0.1			TIME 10 min
						DRL 10 min
	3		GR MIC 497.1-496.3, C.G 495.3			RAN 5.0
			-493.1, 492.5-491.5, NUM THIN		36	REC 5.0
	4		SH + CL FRNG + STRINGERS			LOSS Ø
	5		497.1-491.5			UNACC Ø
491.5	6		SLS		2	DRP + TIDED 5.0 Pull #2 START 11:23
			GR. S. SH. SANDSTONE LENSE			END 11:39
489.3	7		490.8-490.7 (LT GR MED GR)		6R	TIME 11 min DRL 11 min
	8		IGL			RAN 2.9
			R. BR, S. W/OTHER W/GR		3	REC 3.0 T/DEP 7.9
	9		+ GN GR CL MECH BK			LOSS Ø
			489.1-488.9, ANG RN 30° W/			UNACC Ø DEP 8.9
487.1	10		SLK, 488.9-488.8, 488.6- 488.5, -488.4, 488.3-488.2		10.0	Pull #3 START 12:21 END 12:33 T/DEP 10.0
	11		SLS			TIME 12 min
			GR. GN GR, S-M.H GRAI			DRL 12 min
	12		W/SH @ TOP TO SA @ BOTTO		4	RAN 2.1 REC 1.9 LOSS 0.1
484.3	13		SANDSTONE	13.5		UNACC 0.1 DEP 12.6 Pull #4
	14		GR-LT GR, M. H. F-M.G.			START 12:55
			MIC, OCC X BD, SLT+F.G.			END 1:10
	15		483.6 -483.1 high ANG 45°		5	TIME 15 min DRL 15 min
	16		SH SEAM 479.3-479.0,			RAN 7.3 REC 9.1
	17		THIN CL S-NM 479.0, SLT 478.2 -477.8 (GR, S.) BKN		17.0	LOSS 0.1 UNACC 0.1
	18		SH, S-NM 477.5-477.4		6 (CONT)	
	19		CL S-NM 477.2, 469.7			DEP 19.4 T/DEP 19.3
	20		(CONT)			Pull #5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock + Dam   HOLE NO. M-11/1

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 457.1				Hole No. M-1111	
PROJECT GALLIPOLIS Lock + Dam			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #5
					20.5	
	21		— 966.7, occ scattered sm			START 1:29
					7	END 1:49
	22		PYR NOD 477.1 - 473.1			TIME 25 min
						DRL 25 min
	23					PAN 10 min
						REC 10 min
	24					LOSS Ø
						UNACC Ø
					24.2	
	25					
	26				8	
	27					
	28				27.9	
	29				9	DCP 29.9 DCP 29.3
						PULL #6
	30					
	31				31.2	START 2:05
						END 2:25
	32					TIME 20 min
						DRL 20 min
	33				18	PAN 9.4
						REC 9.8
	34					LOSS Ø
						UNACC Ø
	35				34.9	
	36				11	
	37					
	38				38.6	
	39					T/D-P 39.0
						DCP 39.4
	40				12	PULL #7
						START 2:43
	41					END 3:03
						TIME 20 min
	42				42.8	DRL 20 min
						PAN 5.0
					13	REC 5.0
	43					LOSS Ø
						UNACC Ø
453.0	44		Bottom Hole 44.1		44.1	DCP 44.9 T/D-N 44.1

ENG FORM 1836-A (ER 1110-1-1801)	GPO 1966 OF-626-503	PROJECT GALLIPOLIS Lock + Dam	HOLE NO. M-1111

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK+DAM	10. SIZE AND TYPE OF BIT 4X5½
2. LOCATION (Coordinates or Station) MONO M-11 STA 10+58 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W.G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) M-11/2	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER DAVE HARPER	14. TOTAL NUMBER CORE BOXES 13
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE STARTED 12/27/88 COMPLETED 12/27/88
7. THICKNESS OF OVERBURDEN Ø 496.8	17. ELEVATION TOP OF HOLE 496.8
8. DEPTH DRILLED INTO ROCK 43.9	18. TOTAL CORE RECOVERY FOR BORING 43.9 %
9. TOTAL DEPTH OF HOLE 452.9	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			SANDSTONE			PULL #1
	1		GR-LTGR, m.H.-H, m-c.g			START 18:15
			occ mic, sh STRINGERS		1	END 18:26
	2					TIME 11min
			492.9, occ Thin sh STRing			DRL 11min
	3		+ FRAG, 492.2-491.8			PAN 6.8
						REC 9.6
	4		CaL cem 489.1-988.2		3.7	LOSS Ø
			SLT, mech BKN 988.1-987.8			UNACC Ø
	5					
	6				2	I Loose
	7					
	8			7.2		DRP 6.8 PULL #2
						START 18:43
						END 18:50
						TIME 7min
					3	DRL 7min
						PAN 2.3 UNACC 0.3
487.6	9					REC 9.0 TIDRP 8.9
			CLS			LOSS 0.3 DEP 7.1
	10		GN-GR,S, sh, BKN 487.6-487.5			PULL #3
486.1			lowANg, pns, 20° 487.2-486.6	10.7		START 19:06
	11		SLS			END 19:22
			GR-GN.GR, m.H-S, sa			TIME 16min
	12					DRL 16min
			mod BKN cl. gR.s 485		4	PAN 9.6
	13		-984.3, 983.8-983.7, BKN			REC 3.6
			484.3-483.8			LOSS Ø
	14					UNACC Ø TIDRP 11.3
482.0				14.4		DRP 13.7 PULL 4
	15		SANDSTONE			START 19:40
	16		LTGR, m.H. F.g.		5	END 19:52
						TIME 12min
	17					DRL 12min
						PAN 3.8
478.9	18		-	17.9		REC 2.5
			SLS		6 (CONT)	LOSS Ø
	19		GR.S-m.H, sa sh, 478.5-478			UNACC Ø TIDRP 17.2 DEP 175
			sa above + Below, cl scam			PULL #5
476.9	20		478.5, 478.2, 478.0-477.9			START 20:55
						END 21:20
						TIME 25min
						(CONT)

PROJECT GALLIPOLIS LOCK+DAM	HOLE NO. M-11/2

ELEVATION TOP OF HOLE	Hole No.
496.8	M-11/2

PROJECT Gallipolis Lock + Dam

INSTALLATION ORH-CD

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			Pull #5
	21		GR.-LT.GR, M.H. F.mg. occ		6	DRL 25min
						RAN 6.8
					21.6	REC 9.9
	22		mic, few sm, Pyr. Nod			LOSS 0
						UNACC 0
	23		475.9-474.0, ANG 45°, Thin		7	
			sh STRINGER 471.3-471.2			
	24		COL, crm, Nod 471.1-470.1			DCP 29.2 T/DCP 29.3
					24.6	Pull #6
	25		469.7-969.8, REDRILL 965.2			START 21:55
						END 23:13
	26		- 464.2, THIN sh FRAG			TIME 18min
					8	DRL 18min
			461.0, Num thin mic			RAN 9.8
	27					REC 7.4
			Bdd DNS (BAND) 463.1			LOSS 0.9
	28					UNACC 0.9
			462.6		28.4	
	29					
	30				9	
	31					
					31.6	
	32					T/DCP 38.0
	33					
					10	
	34					DCP 39.1
	35				35.3	Pull #7
						START 22:30
						END 22.43
	36					TIME 13min
						DRL 13min
	37				11	RAN 6.1
						REC 8.2
	38					LOSS 0
						UNACC 0
					38.7	
	39					
	40				12	T/DCP 40.0
						DCP 40.2
	41					Pull #8
						START 23:00
						END 23:20
	42					TIME 20min
					42.4	DRL 20min
						RAN 5.0
	43				13	REC 3.9 UNACC 0
						LOSS 0
452.9	44		Bottom Hole		43.9	DCP 44.2 T/DCP 43.9

DRILLING LOG	DIVISION OPD	INSTALLATION OPH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono M-12 10+48 B

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-12/1

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ⌀ 497.1

8. DEPTH DRILLED INTO ROCK 37.9

9. TOTAL DEPTH OF HOLE 459.2

10. SIZE AND TYPE OF BIT 4⅛x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 - Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/4/89 | COMPLETED 1/5/89

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 37.9

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SANDSTONE			Pull #1
	1		Lt. gr-gr, M.H.-H.			START 21:22
			M-Cg. occ mic num		1	END 21:39
	2		sm cl. seams, Frags			TIME 17min
						DRL 17min
	3					RAN 5.0
						REC 5.0
	4					LOSS Ø
					3.8	UNACC Ø
	5					DEP 5.0
					2	Pull #2
	6					START 21:52
						END 22:34
	7				7.2	TIME 92min
						DRL 92min
	8					RAN 6.1
						REC 6.1
	9				3	LOSS Ø
						UNACC Ø
	10					
	11				10.9	
485.7			SLS			DEP 11.4
	12		gr; s-m.H, sa, cls		4	Pull #3
			scam gr. s, clayey			START 23:03
	13		480.2 - 480.1			END 23:17
483.2						TIME 19min
					13.9	DRL 19min
	14		SANDSTONE			RAN —
			gr-Lt gr, M.H, V.F.-			REC 2.6 DEP 13.9
	15		M.g. securely BKN		5	LOSS —
			479.1- 479.2 SLT9 79.1			UNACC —
	16		478.1 slight, BKN			Pull #4
	17		M.-Fg Below 468.5.			START 8:00
					17.5	END 9:00
	18					TIME 60min
						DRL 60min
	19				6	RAN 9.0
						REC 9.0
	20		(CONT)		CONT	LOSS Ø
						UNACC Ø (CONT)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Lock + Dam   HOLE NO. M-12/1

						SHEET 2 OF 2 SHEETS

PROJECT: GALLipoLis LocK + DAM
INSTALLATION: OPH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #4
	21				21.3	
	22					
	23				7	DCP 22.9 PULL #5
	24					START 9:15
						END 9.95
					24.9	TIME 30 min
	25					DRL 30 min
						RAN 5.0
	26				8	REC 5.4
						LOSS Ø
	27					UNACC Ø
	28				28.3	DCP 28.3
	29					PULL #6
						START 10:00
	30				9	END 10:20
						TIME 20 min
	31					DRL 20 min
						RAN 9.6
	32				31.9	REC 9.6
						LOSS Ø
	33					UNACC Ø
	34				10	
	35					
	36				35.7	
	37				11	
459.2	38		BOTTOM HOLE		37.9	DCP 37.9
	39					
	40					
	41					
	42					
	43					
	44					

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DIVISION	INSTALLATION	SHEET 1
ORD	ORH-CD	OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO M-12 STA 10+10B

3. DRILLING AGENCY W. G. JAGUES

4. HOLE NO. (As shown on drawing title and file number) M-12/2

5. NAME OF DRILLER DAVE HARPED

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ① 497.4

8. DEPTH DRILLED INTO ROCK 38.2

9. TOTAL DEPTH OF HOLE 959.2

10. SIZE AND TYPE OF BIT 4×5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE — STARTED 12/28/88 — COMPLETED 12/28/88

17. ELEVATION TOP OF HOLE 497.4

18. TOTAL CORE RECOVERY FOR BORING 36.6 %

19. SIGNATURE OF INSPECTOR LMD.

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.9			SANDSTONE			PULL #1
	1		LT; GR-GR, M.H-H, M.CG			START 7.45
						END 8:03
	2		OCC MIC., NUM SM CL,		1	TIME 18 min
						DRL 18 min
	3		FRAG 993.1-992.7, C.G. 993			RAN 9.2
			-992.7 M.C.G 992.4-993.3			REC 9.2
	4		IM G 992.7-987.7		37	LOSS 0
						UNACC 0
	5		CAL CEM 989.7-989.1			T/DEP 9.2
	6					DEP 9.8
					2	PULL #2
	7					START 8:10
						END 8:20
	8				7.2	TIME 10 min
						DRL 10 min
	9					RAN 3.5
487.8					3	REC 3.2 T/DEP 7.7
	10		SLS			LOSS 0.3
			GR-GN GR, M.H-S, SA, NUM FRK			UNACC 0.3
	11		SLT BRN, FATTY CL LT.GR 487.8			DEP 9.6
			-487.6 SLT SOL 487.6-986.6		11.0	PULL #3
	12		SH BELOW 485.8, SEVERELY			START 8:30
984.9			BKN 485.4-985.2			END 8:50
	13		SANDSTONE		4	TIME 20 min
			GR, M.H, F-V.F.G. SLT			DRL 20 min
	14					RAN 9.6
						REC 4.5 T/DEP 12.2
	15		SLS			LOSS 0
481.9			GR, S-M.H, SA		14.6	UNACC 0 DEP 13.0
	16		CLS SEAM GR.S. CLAYEY		5	PULL #4
480.5			481.1-481.0, 480.6-480.5			START 9:20
	17		SANDSTONE			END 9:35
			GR.-LT GR, M.H, V.F.F-M.			TIME 15 min
	18		G., SEVERELY BKN 479.2-		18.2	DRL 15 min
			479.1, SLT 479.2-978.0		6	RAN 7.2
	19		V. THIN CLS SEAM 478.1-			REC 7.4
			478.3. 978.5-978.4			LOSS 0
	20		CONT		CONT	UNACC 0 T/DEP 9.6

ENG FORM 1836 MAR 71 — PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT GALLIPOLIS LOCK + DAM

HOLE NO. M-12/2

ELEVATION TOP OF HOLE			Hole No. *M-12/2*
497.9			

PROJECT		INSTALLATION		SHEET 2 OF 2 SHEETS
GALLIPOLIS Lock + Dam		*ORH-CD*		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	
	21		Slightly BKN 976.7			DCP 21.0
					21.7	PULL #5
	22		Pyr. STRINGER 967.9-967.6			START 15.55
			M-F.g. below 968.6, F-			END 16.27
	23					TIME 32min
			VE.F. Above, Mic,		7	DRL 32min
	24					RAN 9.9
			SM. SLS FRNG w/calcite			REC 9.9
	25					LOSS 0
			966.2, cal cent. 964.1-9634			UNACC 0
	26				25.9	
	27				8	
	28					
	29				28.8	
	30					DCP 29.5
	31				9	
	32					
	33				32.3	
	34				10	
462.0	35					
	36		SLS 462.0 - 960.0 gR; S.-m.H, SA bKN PNS 0.2 spacing SS SEAMS, g. M.H Fg. 461.6 - 461.9, 461.2-9611 960.5 460.9		36.0	
460.0	37				11	
459.8	38		SANDSTONE 960.0-959.8 LT.gr H, F-Mg. cal cent. Bottom Hole		37.6	DCP 379.3
						PULL # 7/RP 38.2
	39					START 16.95 DCP 385
	40					END 17.16
	41					TIME 31min
	42					DRL 31min
	43					RAN 7.6
	44					REC 8.7
						LOSS 0
						UNACC 0

DRILLING LOG	ORH	INSTALLATION ORH-CD	SHEET 1 OF 4 SHEETS

1. PROJECT
GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station)
MONO M-13 1stA 10+00 B

3. DRILLING AGENCY
W. G JAQUES

4. HOLE NO. (As shown on drawing title and file number)
M-13/1

5. NAME OF DRILLER
DAVID HARPER

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.2

8. DEPTH DRILLED INTO ROCK 38.7

9. TOTAL DEPTH OF HOLE 458.5

10. SIZE AND TYPE OF BIT 4" X 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/7/89 COMPLETED 1/9/89

17. ELEVATION TOP OF HOLE 497.2

18. TOTAL CORE RECOVERY FOR BORING 38.7

19. SIGNATURE OF INSPECTOR JMD

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
497.2			SANDSTONE			PULL #1
			SLY, m.g. m.h., m.gr.			
	1					START 12.40
						END 12:52
						TIME 18
						DRL 18
	2				1	RAN
						REC 4.8
						LOSS 0
						UNACC 0
	3					
	4				3.8	
	5					T/D=P 4.8
						DEP 50
491.5						PULL #2
	6		CLS		2.	START 1:02
490.7			m.-dk.gr., S.·n·h. SLS. LENS 6.1-6.5			END 1:15
	7		ICL			TIME 13 min
			R br, SLK, S. v. bKn 0.1 LC 9.2-9.3 (Frob) V.		7.3	DRL 13 min
						RAN
						REC 4.4
	8					LOSS 0
						UNACC 0
	9				3	
487.9						T/DEP 9.2
			SLS·			DEP 9.4
	10		m.-dKgr, m.h. c·sen, I.S CLS 13.0 - 13.3		(CONT)	PULL #3 (CONT)

| PROJECT _Gallipolis Lock & Dam_ | INSTALLATION _ORH-CD_ | SHEET 2 OF 3 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SLS		3.	PULL #3
			M-dk.gr, m.h, os			
	11		sa. v.s. CLS 13.0-		10.7	START 1:28
			13.3			END 1:43
						TIME 15
						DRL 15
	12					RAN
						REC 4.3
					4	LOSS 0.1
	13					UNACC 0.1
483.7						
			SANDSTONE			T/DEP 13.6
	14		Sly, fig., m.h.,		14.1	DEP 14.0
			m.gr. mech ptgs			
			@ 14.5, 14.9, 15.3			PULL #4
	15		15.7 & 16.8 : SLS 20			
			17.5-18.0 : mech ptgs			START 1:55
			@ 19.3, 20.0, 20.8,			End 2.10
			21.7 & 23.0			TIME 15 min
	16		CLAY 20. 34.3-34.9		5.	DRL 15 min
						RAN
	17					REC 6.8
						LOSS 0
						UNACC 0
	18				17.5	
	19				6.	
	20					T/DEP 20.4
						DEP 20.7
	21				21.1	PULL #5
					7	
	22		(CONT)		(CONT)	(CONT)

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		SANDSTONE			PULL #5
	23				7.	START 2:25 END 3:00 TIME 35 min DRL 35 min RAN REC 6.4 LOSS 0 UNACC 0
	24					
	25				24.8	
	26					
	27				8	T/DEP.; DEP 26.8 PULL #6
	28				28.3	START 7:30 END 8:10 TIME 40 DRL 40 RAN REC 8.1 LOSS 0 UNACC 0
	29					
	30				9.	
	31					
	32				32.0	
	33				10	
	34		(CONT)		(CONT)	(CONT)

ENG FORM 1836-A
JUN 67

GPO: 1969 O7—329-243

PROJECT GALLIPOLIS LOCK & DAM | HOLE NO. M-1311

	ELEVATION TOP OF HOLE		497.2			Hole No.	M-1311	

PROJECT Gallipolis Lock & DAM   INSTALLATION ORH-CD   SHEET 4 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34		SANDSTONE		10.	PULL #6
	35				35.5	DEP! T/DEP 34.9
461.7						PULL #7
	36		CLS m. dk gr, s. m. h. bkn w/cone,spars			START 8:30 END 8:55 TIME 25 DRL 25
460.6					11.	RAN
	37		I CL - R. OR, SLK, S. V. bKN.			REC 3.8 LOSS O UNACC O
	38					
458.5					38.7	DEP! T/DEP 38.7
	39					
	40					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CP	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO M-13 STA 4+54B

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-13/2

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 497.1

8. DEPTH DRILLED INTO ROCK 37.9

9. TOTAL DEPTH OF HOLE 456.2

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/5/88 COMPLETED 1/5/88

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 57.9 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			S.S.			Pull #1
	1		LT-M. gr. m-c.g. mod.H.			START 8:45
			occ chy seam. weathered		1	END 9:03
	2		surfaces			TIME 18 min
						DRL 18 min
	3					RAN 9.4
						REC 9.4
	4					LOSS ∅
					3.8	UNACC ∅
	5					DEP 4.7 T/D=P 9.9
490.9	6		CLS / White. S.		2	Pull #2 START 9:11
490.7			SLS			END 9:39
	7		gRN, F.g. m.H-s., occ partings			TIME 23 min
			on ch/sh vert faces 8.0-9.5		7.5	DRL 23 min
	8		Sa.			RAN 9.7
	9					REC 9.7
						LOSS ∅
	10				3	UNACC ∅
	11					
485.7					11.2	
	12		S.S.			
			gr-gngr. U.F. -F.g.		4	
	13		mica on X-Bdd			
			ch/sh on partings			
	14					T/DEP 19.1
					19.6	DEP 19.6
	15					Pull #3
	16					START 9:50
					5	END 10.06
	17					TIME 16 min
						DRL 16 min
	18					RAN 9.9
					18.2	REC 9.9
	19				6	LOSS ∅
					(cont)	UNACC ∅
	20		(cont)			(cont)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock + Dam   HOLE NO. M-13/2

PROJECT **Gallipolis Lock + Dam** | INSTALLATION **ORH-CD**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #3
	21					
	22				21.9	
	23					
	24				7	T/DCP 24.0
						DCP 24.3
	25				25.3	PULL #4
						START 10:40
	26					END 11:06
						TIME 26 min
	27				8	DRL 26 min
						RAN 9.5
	28					REC 8.7
						LOSS 0.8
	29				28.9	UNACC 0.8
	30					
	31				9	
464.7	32					
	33		CL		32.9	T/DCP 33.1
463.7			9R, S, SLT, FRABLE, CASY,			DCP 33.5
	34		ICL			PULL #5
			R. BR. - 9R.9N, FRIABLE		10	START 11:36
	35		hd SLK,			END 12:04
	36					TIME 18 min
						DRL 18 min
	37				36.8	RAN 4.4
						REC 3.8
					11	LOSS 0.6
459.2	38		Bottom Hole		37.9	UNACC 0.6
						DCP 37.9 T/DCP 37.7
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1960 OF - 620-603

PROJECT **Gallipolis Lock + Dam** | HOLE NO. **M-13/2**

DRILLING LOG

DIVISION ORD	**INSTALLATION** ORH-CD	**SHEET** 1 OF 4 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Monolith M-14 Sta 9+44 "B"

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-14/1

5. NAME OF DRILLER David Harper

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 497.1

8. DEPTH DRILLED INTO ROCK 38.6

9. TOTAL DEPTH OF HOLE 458.5

10. SIZE AND TYPE OF BIT 4" x 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | **STARTED** 1/5/88 | **COMPLETED** 1/5/88

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 38.6 %

19. SIGNATURE OF INSPECTOR Mike Wield

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SANDSTONE, SLY., M-C.G., M h., gr mic within, IRR, dk, gr, SLY, STKs M. SPACED PTgs To 3.8			PULL #1 START 11:00 End 11:13 Time 13 DRL 13 RAN 4.8 REC 3.8 LOSS 6 UNREC 0
	1					
	2				1.	
	3					
493.3					3.8	
	4		ICL R. br/greenish gr., S, SLK 0.4 L.C. (Prob 3.8-4.2) ve. bkn.; grading To SLS.			T/DEP 4.6 DEP 4.8
	5				2.	PULL #2 START 11:23 END 11:37 Time 14 DRL 14 RAN REC 4.3 LOSS 0.4 UNREC 0.4
491.3						
	6		SLS Sa, S. m.h., m. gr., pts shy bkn. 7.1-7.7 (mech) Closely spaced, hor PTgs 8.5-11.2 grading To S.S.		7.3	
	7					
	8				3.	T/DEP 8.5 DEP 8.8 PULL #3
	9					
	10		(CONT)		(CONT)	(CONT)

ENG FORM 1836
MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Lock & Dam   **HOLE NO.** M-14/1

| | ELEVATION TOP OF HOLE | 497.1 | | | | Hole No. M-14/1 | |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SLS		3,	Pull #3
					10.7	
485.9	11					
	12		SANDSTONE SLY, fig. m.h, m.gr.		4.	START 12:40 END 1:20 TIME 20 DRL 20 RAN REC 9.2 LOSS Θ UNRCC θ
	13		w/occ SLS zos ptg @ Thin SLY. LAM @ 13.6 & 13.8: VE SLY 15.6-16.8: mechptg @ 20.1, 23.0, 24.2:			
	14		CLOSELY SPACED PTGS. W/TR. GR. CL COA in SLY. zo 25.1-25.4: 0.1' dk.gr SLS LAM @ 29.3-29.4 & 29.8-29.9		14.5	
	15					
	16				5	
	17					
	18				18.2	T/DEP 17.17 DEP 17.9
	19					Pull #4 STHRT 1:35 END 1:55 TIME 20 DRL 20 RAN
	20				6.	REC 9.3 LOSS θ UNRCC 0
	21					
	22		(CONT)		22.0	(CONT)

PROJECT Gallipolis Lock & Dam	INSTALLATION ORH-CD	SHEET 3 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		SANDSTONE.			Pull #4
	23					START 1:35
						END 1:55
					7.	TIME 20
						DRL 20
	24					RAN
						REC 9.3
						LOSS 0
						UNACC 0
	25					
					25.7	
	26					
	27					
					8.	DEPTH/DEP 27.6
	28					Pull #5
						START 2:10
	29				29.1	END 2:25
						TIME 16
						DRL 16
						RAN
	30					REC 4.7
						LOSS 0
						UNACC 0
	31				9.	
465.8						
			ICL R. bR, S, SLK VE. bKN., SLt S. gR. CL @ CONTACT			T/DEP 31.8 DEP 32.1
	32				32.4	
					10	Pull #6
	33					
	34		(CONT)		(CONT)	(CONT)

PROJECT Gallipolis Lock & Dam	HOLE NO M-14/1

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ELEVATION TOP OF HOLE **497.1**   Hole No. **M-14/1**

PROJECT **Gallipolis Lock & Dam**   INSTALLATION **ORH-CD**   SHEET **4** OF **4** SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34		ICL			PULL #6
			R. br, S, SLK, VE bKN			
			SLT S. gr. cl @ contact			T/DEP 34.9
	35				10	START 2:45
						END 3:11
						TIME 26
						DRL 26
	36					RAN
					36.2	REC 2.6
						LOSS Ø
						UNACC Ø
	37					DEP 37.0
					11	PULL #7
						START 3:37 LOSS Ø
						END 3:47 UNACC Ø
	38					TIME 10
						DRL 10
						RAN 1.7
458.5						REC 3.5
					38.6	T/DEP 38.6 DEP 38.7
	39					

1. PROJECT GALLIPOLIS LOCKS & DAM

2. LOCATION (Coordinates or Station) Monolith M-14 /STA

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-14/2

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.1

8. DEPTH DRILLED INTO ROCK 39.4

9. TOTAL DEPTH OF HOLE 357.7

10. SIZE AND TYPE OF BIT 4" 15½'

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/5/88 COMPLETED 1/5/88

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 39.4 %

19. SIGNATURE OF INSPECTOR MIKE NIELD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SANDSTONE Sly. M.-C.g., m.h., gr., m.c., w/thin Irr. dk. gr. shy stks			Pull #1 START 13:25 End 13:40 TIME 15 DRL 15 RAN 5.1 REC 4.7 LOSS 0.4 UNACC 0.4
493.5	3				3.6	
	4		ICL R. br./greenish gr., s slk 0.4 Lc (prob 3.6-4.0)			
492.0	5					T/DRED=PS.1
	6		S-S SH, C.-m.h., m.gr., pts. shy pt gs. b 6.5, 6.6, 8.0; 8.7 grading		2.	Pull #2 START 13:50 END 14:05 T E 15 DRL 15 RAN 100
	7				7.5	REC 100
488.4	8				3.	LOSS Ø UNACC Ø
	9		CLS			
	10		(CONT)		(CONT)	(CONT)

PROJECT GALLIPOLIS Lock & Dam

HOLE NO. M-14/2

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PROJECT GALLipolis Locks & DAM	INSTALLATION ORH-CD				SHEET 2 OF 4 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS
	10		CLS		3.	PULL #2.
	11		Sly Sr.m.h,, m.gr SCL. coa. hord,Tg @ 9.6 mech. bkn @ 10.9-11.0 sa 12.1-13.7		11.3	
	12					
	13				4.	
483.4						
	14		SANdSTONE			
	15		Sly, f-m.g, m.h. m.gr SLS. LAM, sTarTing @ 22.6, INCReaSing w/depth		14.9	T/DEP : DED 15.1
	16				5.	PULL #3 START 14:11 End 14:35 TIME 24
	17					DRL 24 RAN 10.0
	18				18.5	REC 9.7 LOSS σ UNACC θ
	19				6.	
	20					
	21					
	22		(Cont)	(Cont)		(Cont)

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| | | ELEVATION TOP OF HOLE | 497.1 | Hole No. | M-14/2 | |

PROJECT Gallipolis Locks & Dam

INSTALLATION ORH-CD

SHEET 3 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		SANDSTONE		6. / 22.3	Pull #3
	23					
	24				7.	
	25					T/DEP 25.0 DEP 25.1
						Pull #4
	26				25.8	
470.6						START 14.50
	27		CLS S-M.h., dk gr., grading into IcL			END 15:45
						TIME 65 min
	28				8	DBL 65 min
468.6						RAN 10.0
						REC 10.0
						LOSS 0
	29		IcL			UNACC 0
			GREENISH. Sh, gn/ R. bR, S SLK. v. bKn becoming R/bR @ 31.5		29.3	
	30					
	31				9.	
	32					
	33				29.3	
					10.	
	34		(Con⁺)	(Con⁺)	(Con⁺)	

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				ELEVATION TOP OF HOLE	4971			Hole No. M-14/2

PROJECT: Gallipolis Locks & Dam

INSTALLATION: ORH-CD

SHEET 4 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34		ICL			Pull #4
			greenish gr/r.br.			
	35		S slk, v bkn			
			Becoming r. br @ 31.5	10		DEP 35.1 T/DEP 35.0
						Pull #5
	36					START 4:20
					36.3	End 4:45
						Time 25
	37					DRL 25
						RAN 4.1
						REC 4.2
	38					Loss 0
					11.	UNACC 0
	39					T/DEP 39.1
457.7			Bottom Hole		39.4	DEP 39.4
	40.					

GPO. 1969 OF—328-243

PROJECT: Gallipolis Lock & Dam

HOLE NO: M-14/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4" / 5½

2. LOCATION (Coordinates or Station) Monolith M-15 / STA 9+00 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W. G. Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

4. HOLE NO. (As shown on drawing title and file number) M-15 /1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER Steve Fry

14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/5/89 COMPLETED 1/5/89

7. THICKNESS OF OVERBURDEN 0   496.9

17. ELEVATION TOP OF HOLE 496.9

8. DEPTH DRILLED INTO ROCK 33.7

18. TOTAL CORE RECOVERY FOR BORING 33.7

9. TOTAL DEPTH OF HOLE 463.2

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SAND STONE,, M-C.g. m.h., gr bkn. (mech) 0.0-2.3			Pull #1
	1					START 4:15
						End 4:48
						Time 23
					1	DRL 23
	2					RHN 5.0
494.6						REC 2.8
			I-CL gr, R. bk., S., mic b'kn. Throught; 0.6 rc (Prob 2.3-2.9)			Loss 0 UNACC 0
	3					
					3.6	
	4					
						T/DEP 4.6
492.0						DEP 5.0
	5		SLS SH, S.m.h., M.gr bkn along hn frx 5.8-6.1; CL coz, hor PLA @ 6.7			T/D-5.F
					2	Pull #2
	6					START 4:48
						End 5:03
						Time 15
	7					DRL 15
					7.2	RAN .5
						REC 4.8
						Loss 0.6
489.7						UNACC 0
	8		CLS/SLS Shy, S, m.gr C.C. coz, contact		3	DEP 5.0
						Pull #3
	9					
	10		(CONT)		(cont)	(cont)

| PROJECT Gallipolis Lock & Dam | | | INSTALLATION ORH-CD | | | SHEET 2 OF 3 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
486.6	10				3.	Pull #3
						START 5:40
						END 5:55
	11				11.2	TIME 15
						DRL 15
						RAN 7.7
	12		SANDSTONE			REC 4.8
			Sh/, Fi m.h m.gr.			LOSS 0
			cl. co2 ptg @ 11.6			UNACC 0
			ptgs along sls.			T/DEP 12.8
	13		LAM 21.2, 21.4, 21.6		4.	DED 13.2
			22.4 & 22.6 grading			Pull #4
			into SLS			START 6:15
	14					END 6:30
						TIME 15
					14.6	DRL 15
						RAN 2.6
	15					REC 2.7
						LOSS 0
						UNACC 0
						T/DEP & DEP 15.8
	16				5.	
						Pull #5
	17					START 6:58
						END 7:15
						TIME 17
	18				18.2	DRL 17
						RAN 9.8
						REC 5.1
	19					LOSS 0
						UNACC 0
	20				6	
						T/DEP 20.6
	21					
	22		(CONT)		21.9	(CONT)

| PROJECT GALLIPOLIS LOCK & DAM | | | | INSTALLATION ORH-CD | | | | SHEET 3 OF 5 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		SANDSTONE			PULL # 5
	23					
	24				7	
	25					
				25.4		DEP 25.6
	26		SLS S.-m.h., M.gr. gRading into ICL			PULL #6 START 7.15 END 7.23 TIME 8 DRL 8 RAN 3.9 REC 4.5 LOSS θ UNACC θ
	27				8	
	28					
	29		ICL R.bR/gReenish gR. S SLK, GKM.	29.1		DEP 29.3
						PULL #7 START 7.35 END 7.55 TIME 20 DRL 20 RAN 0.0 REC 4.5 LOSS θ UNACC C
	30				9	
	31					
						PULL #8 START 9.00 END 9.27 TIME 22 DRL 22 RAN 2.5 REC 4.1 LOSS θ UNACC C
	32			32.3		
	33				10	
463.2			Bottom Hole	33.7		DEP 33.8 T/DeP 33.7
	34					

DRILLING LOG	DIVISION ORH	INSTALLATION ORH-CD	SHEET OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4 7/5.5"

2. LOCATION (Coordinates or Station) Mono R-15 Sta 8+74B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. G. Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

4. HOLE NO. (As shown on drawing title and file number) M-15/2

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER Dewell Norris

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE

☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE	STARTED 1/5/89	COMPLETED 1/6/89

7. THICKNESS OF OVERBURDEN 0   496.9

17. ELEVATION TOP OF HOLE 496.9

8. DEPTH DRILLED INTO ROCK 33.2

18. TOTAL CORE RECOVERY FOR BORING 33.2 %

9. TOTAL DEPTH OF HOLE 463.7

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE sdy, m.-c.g. m.h., m. gr CLOSELY spaced hor ptgs. 0.0-1.9; cl. coh, irr fts @ 3.1		1	PULL #1
	1					START 5:15
	2					END 5:30
						TIME 15 min
						DRL 15 min
						RAN 5.0
	3					REC 4.7
493.5						REC 0.4
			CLS/ICL gr. -greenish gr. s-m.h. v.s & bkn 3.4-4.2 w/0.4 z.c (w sch) grnd into SLS	3.7		
	4					
	5					DEP 5.0 TDEP 5.1
491.6			SLS sz, m.h., m.gr, hr, irr, it 6.0-7.2 ptgs @ 7.7 & 8.3 grading into sandstone		2	PULL #2
	6					START 5.45
						END 6.15
	7					TIME 30 min
						DRL 30 min
						RAN 7.4
				7.6		REC 6.4
	8				3	REC 1.0
						UNREC 5
	9					
	10		(Cont)		(Cont)	(Cont)

PROJECT Gallipolis Lock & Dam	HOLE NO. M15/2

PROJECT GALLIPOLIS LOCK & DAM			INSTALLATION ORH-CD			SHEET 2 OF 3 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SANDSTONE			PULL #2
			Shy., fig., m.h., m.g		3	
	11		w/ dk.gr shy. stgs			
			& zos hor. ptgs			
			w/ +r grid @ 110		11.4	
			& 11.1 grading into			
	12		SLS			
483.9	13					
			SLS.		4	
			SH, mlt, dk.gr, shy			
			shy hor ptg @ 14.4,			T/DEP 13.5
	14		bkn (mech) 14.6-14.8			
			grading into SS.			
	15				14.8	
						DEP 15.1
	16					PULL #3
480.5						
			SANDSTONE			START 6:35
	17				5	END 6:55
			Shy., fig., m.h. m.gr.			TIME 20 min
			dk SLS lam & zos			DRL 20 min
			0.2 LC btwn 13.5-			RAN 6.5
			21.6 (?) O hor			REC 7.9
	18		contact			LOSS 0.2
						UNREC 0
	19				18.7	
	20				6	
	21					
						DEP T/DEP 21.6
	22		(CONT)	(CONT)		(CONT)

| PROJECT *Gallipolis Locks & Dam* | | | | INSTALLATION *OCH-CD* | | SHEET *3* OF *3* SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		SANdsTONE		22.2	Pull #4
	23					START 7:20
473.5						End 7.50
			SLS m. -dk. gr., m.h.			TIME 30 min
472.8	24				7	DRL 30 min
			CLS m.-dk, gr, s.-m.h.			RHN 8.6
						REC 8.1
	25					LOSS 0.3
						WHCC 0
	26				26.0	
469.9	27		ICL GREENISH gr.-r. br. s., SLK bkn. 0.3 LC 29.3-30.0		8	
	28					
	29					
					29.5	
	30					T/DEP 30 DEP 30.2
						Pull #5 START 4:00 Loss 0
	31				9	End 4.25 WHCC 0
						time 25
						DRL 25
						RHN 3.3
	32					REC 2.3
					32.3	DEP & T/DEP 32.3
						Pull #6
					10	START 5:15 RHN ? End 5:30 REC 2? time 15 LOSS 0 DRL 15 WHCC
463.7	33		BoTTom HOLE		33.2	DEP & T/DEP 33.2
	34					

ENG FORM **1836-A**
JUN 67

| | PROJECT *Gallipolis Lock & Dam* | HOLE NO. *M-15/2* |

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 3 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

10. SIZE AND TYPE OF BIT 4" X 5½"

2. LOCATION (Coordinates or Station) MONO M-16 ISTA 8+64 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W. G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) M-16/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER STEVE FRY

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 1/5/89 COMPLETED 1/5/89

7. THICKNESS OF OVERBURDEN Ø 476.9

17. ELEVATION TOP OF HOLE 496.9

8. DEPTH DRILLED INTO ROCK 33.4

18. TOTAL CORE RECOVERY FOR BORING 33.4 %

9. TOTAL DEPTH OF HOLE 463.5

19. SIGNATURE OF INSPECTOR DAVID NILGEN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.9			SANDSTONE SHY, M.-C.G., M.H. III. 3R SEU, NEAR HOR D+GS			Pull #1 START 9:54 END 10:27 TIME 33 min DEL 33 min RUN 4.8 REC 4.2 LOSS .04 UNREC 0.0
	1					
	2				1.	
494.3			GRAVEL S. M.-TK.GR. - E.GR. S. GR. CL CONTACT @ 2.6-3.3 W/0.3 L.C.		3.9	
	3					
	4					T/DEP 4.6 DEP 4.8
491.9	5		SLS OCC. SH. M. DK. GR., M.H. HRD., PTGS @ 6.1 & 6.3 GRADING SH W/GRTH BKN. HIGHG IRR HA. - UCR FRACS. BTWN 8.6 & 10.2 W/ DK. GR.-L.IRD PTGS @ 9.9, 10.0 & 10.2			Pull #2 START 10:55 END 11:15 TIME 20 DEL 20 RUN 3.7 REC 4.0 LOSS Ø UNREC Ø
	6				2.	
	7				7.6	
	8				3.	DEP LT/DEP 8.5 Pull #3
	9					
	10		(Cont)	(Cont)		(Cont)

PROJECT: GALLIPOLIS LOCK & DAM   INSTALLATION: ORH-CD   SHEET 2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
486.7	10				3	Pull #3
	11		SANDSTONE SLY, Fig, m.h., m.g. Thin, hor. Sly STgs, STarting @ 11.5		11.0	START 3:42 END 3:55 Time 13 min DRL 13 min RAN 3.0 REC 5.2 LOSS θ UNACC θ
	12					
484.0	13				4	
	14		CLS DK. gR m.h. Ve. bkn w/dR. gR fLd. 13.0 - 13.4; SH 70 13.4 - 13.8 bkn L mech 14.3 - 15.8			T/DEP 13.5
	15				14.7	
481.1	16		SANDSTONE			
	17		Fig, m.h., m.gR Sly mech. ptg @ 17.8 & 18.4 TRANS STARTING @ 21.4 0.1 LC. bTwn 18.7- 23.6 (?)		5	DEP 16.5 Pull #4 START 4:10 REC 4.9 END 4:30 LOSS θ TIME 20 UNACC θ DRL 20 RAN 2.2
	18				18.7	T/DEP 18.6 DEP 18.7
	19					Pull #5 START 4:45 END 5:00 TIME 15 DRL 15 RAN 5.0 REC 4.8 LOSS 0.1 UNACC θ
	20				6	
	21					
	22		(CONT)		22.0	(CONT)

ENG FORM 1836-A JUN 67   GPO 1968 OF—328-242   PROJECT: GALLIPOLIS Lock & Dam   HOLE NO. M-16/1

PROJECT, *Gallipolis Locks & Dam*		INSTALLATION *ORH-CD*			SHEET *3* OF *3* SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	23		SANDSTONE			
473.3						DEP 23.7 T/DEP 23.6
	24		CLS DK. GR., S-M. hd 0.1 g R. cl. @ 23.8- 23.9 V. BKN. 26.0- 26.8 grading into ICL		7	
	25				25.5	PULL #7 START 6:05 END 6:20 TIME 15
	26					DRL 15 RHN 5.1 REC 4.3
470.1						LOSS 0.3 UNACC 0
	27		ICL - R - bk, S., SLK, OCC V. bkn.		8	
	28					
	29				29.1	
	30					
	31				9	
	32				32.6	
	33					
463.5			Bottom Hole		33.4	T/DEP 33.4 DEP 33.5
	34					
	35					

ENG FORM 1836-A JUN 67	GPO: 1968 OF—329-242	PROJECT *Gallipolis Lock & Dam*	HOLE NO. *M-1611*

DRILLING LOG

DRILLING LOG	DIVISION ORD	INSTALLATION OPH-CD

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO P-16 / STA 8+38 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-16/2

5. NAME OF DRILLER POWELL NORRIS

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.9

8. DEPTH DRILLED INTO ROCK 34.5

9. TOTAL DEPTH OF HOLE 462.4

10. SIZE AND TYPE OF BIT 4" X 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A | **DISTURBED** N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/6/89 COMPLETED 1/6/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 34.5

19. SIGNATURE OF INSPECTOR TMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE SL% m-C.g, m.h, m gr. seu near hor ptgs.		1	PULL #1 START 6:00 END 6:15 TIME 15 DRL 15 RAN 5.0 REC 4.1 LOSS 1.0 UNACC 0
493.9	3		CLS/ICL greenish gr - r.br, s - m.h, LOL (mech) 3.6-5.1 ctn 5.8-6.2		3.6	DEP 5.0 TIDE 5.1
					Z	PULL #2 START 6:25 END 7:05 TIME 40 DRL 40 RAN 10.0 REC 9.6
489.0					7.9	LOSS 0
	8		SANDSTONE f.g. m.h., m. gr. w/ occ cls. len & lam o. vcrt, T 7.9-8.6 IRR cont ~ 8.6 cls 8.6-8.9 cl/ld ptgs @ 9.0, 9.1, 9.5 & 9.8 grading into snsLs ~ 11.0		3.	UNACC 0
	10				(cont)	(cont)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   (TRANSLUCENT)

PROJECT GALLIPOLIS LOCK & DAM   **HOLE NO.** M-16/2

PROJECT Gallipolis Lock & Dam | INSTALLATION ORH-CD | SHEET 2 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SANDSTONE			Pull #2
485.9	11				3	
	12		SLS Say; m.h.; m-dk.gr Irr ptgs @ 11.8 12.3, 12.4 & 12.5 (mech)		11.7	
	13				4	
	14					
	15			15.2		T/Dep 14.7 Dep 15.0
	16					Pull #3 START 7.15 End 7.45 TIME 30 DRL 30 RAN 9.3 REC 10.3 LOSS 0 UNACC 0
480.1	17		SANDSTONE Sky. fig., m.h., m.gr 45°, 0, T, 17.6-17.8 bkn 45°, +.pm. 18.0 to 18.3 CLS to 20.1 20.8 w/ BKN cl coa. 20.1, 20.2		5	
	18					
	19			19.1		
	20				6	
	21					
	22		(Cont)	(Cont)		(Cont)

| PROJECT GALLIPOLIS LOCK : DAM | | | INSTALLATION ORH-CD | | | SHEET 3 OF 4 SHEETS |
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
474.7	22					PULL #3
	23		CLS S. M. gr. cl. w/ rock frngs 23.0 - 23.2		22.7	
	24					
	25				7.	DEP : T/DE : 24.7 PULL #4
	26				264	START 8.40 ENd 9.30 TIME 50 DRL 50 RAN 10.0 REC 9.5 LOSS 0 UNACC 0
469.9	27		ICL R.bl. - GREENISH gr, sLk v/ bkn Through		8.	
	28					
	29					
	30				30.2	
	31					
	32				9.	
	33					
	34		(CONT)		(cont)	(CONT)

ELEVATION TOP OF HOLE 496.9

Hole No. M-1612

PROJECT Gallipolis Lock & Dam

INSTALLATION ORH-CD

SHEET 4 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
462.4	34		ICL - R.BR. GREENISH gr. SLK Ni, bKN, through		10,	Pull #4 T/Dep 34.5 DEP 34.7
	35					

ENG FORM 1836-A JUN 67

GPO: 1969 OF—329-243

PROJECT Gallipolis Lock & Dam

HOLE NO. M-1612

DRILLING LOG	DIVISION ORD	INSTALLATION ORH'cD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono M-17 STA 8+28B

3. DRILLING AGENCY W. G. Jaoues

4. HOLE NO. (As shown on drawing title and file number) M-17/1

5. NAME OF DRILLER Dave Happer

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.8

8. DEPTH DRILLED INTO ROCK 33.3

9. TOTAL DEPTH OF HOLE 463.5

10. SIZE AND TYPE OF BIT 4V5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — **DISTURBED** N/A — **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/9/89 **COMPLETED** 1/9/89

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 33.3

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			SANDSTONE			Pull #1
	1		gr. m.H. F.g. Bkn 0.0-1.5			START 9:30
						END 9:55
494.6	2				1	TIME 25min
			ICL			DRL 25min
	3		R. Br. 2.2-3.5 S. Bkg 992.c			RAN 4.7
						REC 4.3
	4		993.3 gr. gngr. /s. sc		3.5	LOSS .4
			slk 985.5-485.7 Band			UNACC .4
	5		R.Br.-gr.gngr			
						Dep 4.7
	6					Pull #2
					2	START 10:10
	7					END 10:25
					7.3	TIME 15min
	8					DRL 15min
						RAN 4.3
	9					REC 4.3
					3	LOSS Ø
	10					UNACC Ø
						Dep 9.0
	11				11.1	Pull #3
						START 10:40
	12				4	END 11:09
484.0						TIME 29min
	13		SANDSTONE			DRL 29min
			ge, F.g. m.H.			RAN 9.9
	14				14.5	REC 9.9
						LOSS Ø
	15				5	UNACC Ø
	16					
	17				17.5	
479.2						
	18		SLS			Dep 18.4
			gr. m.-Fg. Bkn 17.6-20.2		6	Pull #4
	19					START 11:22
						END 11:55
	20		(CONT)		(cont)	TIME 33min (CONT)

ENG FORM 1836 MAR 71 — PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock + Dam **HOLE NO.** M-17/1

| PROJECT GALLipolis Lock+Dam | INSTALLATION ORH-CD | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS			PULL #5
	21		BKN 21.3 - 29.6		6	DRL 23min
						RAN 3.9
					21.3	REC 3.9
	22					LOSS 0
						UNACC 0
						DCP 22.3
	23					PULL #6
					7	START 12:30
	24					END 1:30
						TIME 60min
					29.6	DRL 60min
471.8	25		ICL			RAN 7.8
	26		P.BR.S. SLK, MOTTLed			REC 7.6
			GR-GN.GR., BKN 25.0 - 33.0			LOSS .2
	27				8	UNACC .2
	28					
	29				28.4	
	30				9	DCP 29.9
						PULL #7
	31					START 1:50
						END 2:13
						TIME 23min
	32				31.8	DRL 23min LOSS 0
					10	RAN 3.4 UNACC 0
463.8	33		Bottom HoLe			REC 3.4
					33.3	DCP 33.3
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1960 OF - 628-803

| PROJECT GALLipolis Lock+Dam | HOLE NO. M-17/1 |

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DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono M-17 / STA 7+96B

3. DRILLING AGENCY W-6 JAQUE

4. HOLE NO. (As shown on drawing title and file number) M-17/2

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0   497.1

8. DEPTH DRILLED INTO ROCK 33.2

9. TOTAL DEPTH OF HOLE 463.9

10. SIZE AND TYPE OF BIT 4" 15½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/6/89 COMPLETED 1/7/89

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 33.2 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SANDSTONE.			PULL #1
	1		sLy., m.3., m.h., m.gr			START 22:15
			v bkn.			END 22:35
						TIME 20 min
494.9	2				1	DRL 20 min
			ICL - r. cr. s, SLK			RHW 4.0
	3		v.s. 2.2-2.4			REC 4.0
						LOSS 0
						UNACC 0
492.9	4				3.7	DEP 3.9
			SLS			
	5		S2,, m.h, m.dk.gr			PULL #2
			w/occ SANDSTONE			START 22:45
			70a v.s. (WEAD)		2	END 23:00
	6		4.2; coa. a no. ft			TIME 15 min
			w 4.8 gracing			DRL 15 min
	7		more sand w/			RHW 7.5
			depth			REC 7.5
					7.2	LOSS 0
	8					UNACC 0
					3	
488.3						
	9		SLS/SS			
			Interbdd. sLy			
	10		t's, m.h, m.gr.		(CONT)	(CONT)

PROJECT	INSTALLATION	SHEET 2
Gallipolis Lock & Dam	ORH-CD	OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SLS/SS		3	Pull #2
			SLS - shy, sa, m.-			
	11		dk gr ½ csa. pTg. e		10.9	
			13.5 (cave in)			
	12		0.1 L.C. @ 13.1-13.2(?)		4	
4940	13					
					13.5	DEP 13.4
			SANDSTONE			Pull #3
	14		fig, m.ii. m.g. within			START 7:35
			shy Lami. orading			END 7:56
	15		To cls			TIME 21.0 min
					5	DRL 21.0 min
	16					RAN 6.1
						REC 6.0
						LOSS .01
	17					UNACC 0
					17.2	
	18					
	19				6	
						DEP 19.6
	20					Pull #4
					20.7	
4760	21				7	
			CLS.			
			S. m h., m-dk. gr,			
	22		occ shy		(cont)	(cont)

GPO: 1969 OF—339-343

PROJECT	HOLE NO.
Gallipolis Lock & Dam	M-17/2

| ELEVATION TOP OF HOLE | 497.1 | Hole No. | N-17/2 |

PROJECT: Gallipolis Lock & Dam

INSTALLATION: ORH-CD

SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		CLS			
			S. -m.h, m-dk.			Pull #4
	23		GR, occ Sty		8	
	24					START 8:10
						END 8:41
					24.5	TIME 31.0 min
						DRL 31.0 min
472.0	25					RAN 10.0
						REC 10.0
	26		ICL -			LOSS 0
			R. GR, S, SLK, V			INACC 0
			LKN.			
	27				9	
	28					
					28.4	
	29					
						DEP 29.6
	30					Pull #5
					10	START 9:05
						END 9:38
	31					TIME 33 min
						DRL
						RAN 33 min
	32				31.8	REC 3.6
						LOSS 0
						INACC 0
					11	
463.9	33		Bottom Hole		33.2	Depth/Dep 33.2
	34					

ENG FORM 1836-A
JUN 67

GPO: 1966 OF—328-242

PROJECT: Gallipolis Lock & Dam

HOLE NO. N-17/2

DRILLING LOG

DIVISION	ORD
INSTALLATION	ORH-CD
SHEET 1 **OF** 3 **SHEETS**	

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Monolith -18 STA

3. DRILLING AGENCY W.G. Jaoues

4. HOLE NO. (As shown on drawing title and file number) M-18/1

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0   496.9

8. DEPTH DRILLED INTO ROCK 32.9

9. TOTAL DEPTH OF HOLE 464.0

10. SIZE AND TYPE OF BIT 4" x 5h

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | **STARTED** 1/6/89 | **COMPLETED** 1/6/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 32.9 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9	1		SANDSTONE SLY., m.-c.g., w/h, m.g. sev wear nor PTSS			PULL #1 START 6:55 END 7:10 TIME 15 DRL 15 RAN 5.0 REC 4.? LOSS 0 UNREC 0
495.2	2 3 4		CLS/ICL S. m-ck. gr O/S., gr. 1.17-1.8, CLS beginning @ 3.0		1 3.8	
492.0	5 6 7		SLS-SH, dk.gk. w/h. SH. content increasing w/ depth. Mech. PTgS @ 9.0, 9.2 grading into SS/SLS		2. 7.3 3	DEP 5.0 T/Dep 4.9 RUN #2 START 7:25 END 7:45 TIME 20 DRL 20 RAN 5.1 REC 4.7 LOSS 0 UNREC 0
486.9	8 9 10					T/D:P 9.8

PROJECT Gallipolis Lock & Dam				INSTALLATION ORH-CD		SHEET 2 OF 3 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
486.9	10		SS/SLS		3	DEP 10.1
						PULL #3
						START 8.37
	11		Interbedded, SS fig		11.0	END 8:50
			gr m.h., SLS, s-m.h.			TIME 13
			ni dkg mech. ptgs			DRL 13
			@ 11.3, 11.9, 12.3.			RAN 6.7
	12		oz LC btwn 9.8			REC 4.0
			and 14.0 grading			LOSS 0
			to SANDSTONE			UNACC 0
	13				4	
483.1						
	14		SANDSTONE,			T.DEP 14.0
			occ. slty, f'g., n.h.,			
			n. gr.; sev. mech		14.6	
			ftgs btwn 15.0 &			
	15		23.0 w/0.1 RC			
			btwn 14.0 & 18.4			
			bkn w/s. grch.			
			@ 23.0			
	16				5	
						DEP 16.7
						PULL #4
	17					START 9:00 REC 4.3
						END 9:20 LOSS 0.1
						TIME 20 UNACC 0
						DRL 20
	18				18.0	RAN 2.3
						T.DEP 18.4
	19					DEP 17.0
						PULL #5
	20				6	START 7:32
						END 7:52
						TIME 20
						DRL 20
						RAN 4.0
	21					REC 4.2
					21.3	LOSS 0
						UNACC 0
	22		(cont)		7	(cont)

ENG FORM 1836-A
JUN 67

GPO 1969 OF—329-242

| PROJECT Gallipolis Lock & Dam | HOLE NO. M-18/1 |

PROJECT GALLIPOLIS Locks & DAm				INSTALLATION ORH-CD			SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		SANDSTONE			T/DEP 22.6
473.9	23					DEP 23.0
	24		CLS, S. M.h., ml-dk GR w/occ. ptgs & CORE SPINS		7.	PULL #6 START 10:05 End 10:25 TIME 20 DRL 20 RAN 4.7 REC 5.1 LOSS 0 UNACC 0
	25				24.9	
470.9	26		ICL S R.LH, SLK BKN C.9 LC, PROBLEM btwn 22.6 & 27.9		8.	DEPLT/DEP 27.7 PULL #7 START 10:45 End 11:05 TIME 20 DRL 20 RAN 5.2 REC 4.3 LOSS 0.9 UNACC 0
	27					
	28				28.6	
	29					
	30					
	31				9.	
	32					
464.0	33		Bottom HoLE		32.9	DEP LT/DEP 32.9
	34					

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 3 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO M-18 / STA 7+54B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-18/2

5. NAME OF DRILLER A. TICE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 476.7

8. DEPTH DRILLED INTO ROCK 33.8

9. TOTAL DEPTH OF HOLE 463.1

10. SIZE AND TYPE OF BIT 4" / 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL M-53 mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/7/89 COMPLETED 1/7/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 33.0 %

19. SIGNATURE OF INSPECTOR LMN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE sl G, m.h., m.g., bkn Throughout			PULL #1
495.6	1					START 10:15
			ICL			END 10:30
						TIME 15 min
	2		l br - greenish gr, s, slk		1	DRL 15 min
						RMN 5
						REC 5
						LOSS Ø
	3					UNACC Ø
	4				3.7	
	5					DEP 5.0
491.6						PULL #2
			SLS		2	START 10:58
	6		sl. dk gr, m h occ sa grading SA w/depth c.l.s gr Ck. at contact			END 10:57
						TIME 19 min
	7					DRL 19 min
					7.2	RMN 7.7
						REC 7.7
						LOSS Ø
	8					UNACC Ø
					3	
	9					
486.9	10		(CONT)		(cont)	(CONT)

PROJECT GALLIPOLIS Lock & Dam	HOLE NO. M-18/2

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SANDSTONE		3	PULL #2 (CONT.)
	11		SLY. f.g., m.h., M.S.R., MECH. PTG @ 13.7 & 13.8		10.9	
	12					
	13				4	
483.2						
	14		SS/SLS			
			INT-RBED, MOSTLY SANDSTONE		14.5	
	15					DEP 14.9 PULL #3
	16				5	START 11:10 END 11:31 TIME 21 min DRL 21 min RAN 24.6 REC 24.6 LOSS 0 WIDHCC C
	17					
	18				18.1	
	19					
	20				6	
	21					
475.1	22		C.L.S		21.8 7	

Project: Gallipolis Lock & Dam
Installation: OPH-CD
Sheet 2 of 3 Sheets

PROJECT _Gallipolis Lock & Dam_	INSTALLATION _ORH-CD_	SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		CLS			PULL #3 (CONT.)
	23		M.Gr. S. Nh. occ. V.Sty V.bkn w/ Gr.cl.coa @ 21.8-22.3		7	
	24					
472.3						DEP 24.6
	25		ICL		25.2	PULL #4,
	26		Greenish gr-r.br, S. slk becoming reddish @ 26.5 V bkn to bottom of hole 0.8 L.C. btwn 29.6-33.8 (disch)			START 12:54 END 13:17 TIME 53 min DRL 53 min RAN 8.4 REC 7.6 LOSS 0.8 UNACC 0
	27				8	
	28					
	29				29.1	
	30					
	31				9	
	32					
	33				32.6	
					10	
463.1			Bottom Hole		33.8	DEP 33.8
	34					

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DRILLING LOG

DIVISION ORD		**INSTALLATION** OEH-CD		**SHEET** 1 OF 3 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO-M-19 /STA 4+30 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-19/1

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.9

8. DEPTH DRILLED INTO ROCK 32.9

9. TOTAL DEPTH OF HOLE 464.0

10. SIZE AND TYPE OF BIT 4" / 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M. SL

12. MANUFACTURER'S DESIGNATION OF DRILL M-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** NA | **UNDISTURBED** NA

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER NH

16. DATE HOLE | **STARTED** 1/7/89 | **COMPLETED** 1/7/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 32.9 %

19. SIGNATURE OF INSPECTOR YMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE M.G, M.h, M.GR.			PULL #1
	1					START 7:35
						END 8:05
						TIME 30 min
495.3						DRL 30 min
	2		ICL		1	RAN 5.0
						REC 5.0
			R. DK, GREENISH GR., S. SLK, LKN			LOSS Ø
	3					UNACC Ø
					3.5	
	4					
	5				2	DEP 5.0
491.4						PULL #2
	6		SLS			START 8:20
			Shy, S. M.h, m -dk GR, CLC, SH.			END 8:40
						TIME 20 min
	7					DRL 20 min
					7.2	RAN 3.9
			CLS LEN 7.2 - 7.6			REC 3.9
			BECOMING SA @ 7.6			LOSS Ø
	8					UNACC Ø
	9				3	
	1					DEP 8.9
						PULL #3
	10		(CONT)	(CONT)	(CONT)	(CONT)

PROJECT Gallipolis Lock & Dam | **HOLE NO.** M-19/1

| PROJECT *Gallipolis Lock & Dam* | | INSTALLATION *ORH-CD* | | | SHEET *2* OF *3* SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		SLS		3	PULL #3
486.1					10.8	
	11		SANDSTONE			START 8:53
			Sly fig, m.h.,			END 9:27
	12		m. gr.			TIME 34 min
						DRL 34 min
			MECH, pfg. @ 13.5			RAN 6
	13				4	REC 8.4
						LOSS 0
						UNACC 0
	14					
482.4					14.5	
	15		SS/SLS			
			INTERbdd.			
	16		Mostly s.s.		5	
	17					
						DEP 17.7
479.2					18.2	PULL #4
	18		SANDSTONE			
			Sly. fig., m.h.,			START 7:40
	19		m. gr.			END 10:03
						TIME 23 min
						DRL 23 min
	20				6	RAN 6
						REC 8.4
						LOSS 0.1
	21					UNACC 0
					21.7	
474.9	22		(CONT)		7 cont	(CONT)

PROJECT Gallipolis Lock & Dam	INSTALLATION ORH-CD				SHEET 3 OF 3 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22					
			CLs			Pull #4
	23		m.-dk.gr., s.-mh.		7	
			Shy 0.1 Lc btwn			
	24		17.3 ; 25.8			
	25					
					25.5	
						DEP 25.8
	26					Pull #5
						START 10:20
	27				8	END 10:40
469.4						TIME 20 min
						DRL 20 min
						RHN 6
						REC 3.3
	28		ICl			LOSS 0
			R.br., s silk			UNACC 0
	29		0.9 Lc btwn 25.8		29.0	DEP 29.1
			; 32.9			Pull #6
	30					START 11:00
						END 11:17
	31				9	TIME 17 min
						DRL 17 min
						RHN 6
						REC 7.9
	32					LOSS 0
						UNACC 0
464.0			Bottom Hole		32.9	DrP+T/DrP32.9
	33					
	34					

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DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 1 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO M-R   STA 7+12 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-19/2A

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.6

8. DEPTH DRILLED INTO ROCK 18.3

9. TOTAL DEPTH OF HOLE 478.3

10. SIZE AND TYPE OF BIT 4 N5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED N/A   UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 6

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/24/89   COMPLETED 1/24/89

17. ELEVATION TOP OF HOLE 496.6

18. TOTAL CORE RECOVERY FOR BORING 18.3

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6			ICL		Box 1	PULL #1
	1		Motted, S, w/slr			START 3:15
						END 3:30
	2					TIME 15min
						DRL 15min UNACC Ø
						RAN 3.5
	3					REC 3.5
						LOSS Ø
492.9					3.5	DEPTH DEP 3.5
	4		SLS		Box 2	PULL #2
			m-dk.gr, s-m.h.			START 3:40
	5					END 4:00
						TIME 20min
			Sa Len 7.2-7.5 w/cl.			DRL 20min
	6					RAN 40
						REC 40
	7		Contact @ 7.5; grading			LOSS Ø
					7.2	UNACC Ø
			Sa @ 18.2 S.CL.F.Ld. Contact			T/DEP 7.5
	8				Box 3	
			@ 9.0			
487.6						DEP 9.4
			SANDSTONE			PULL #3
	10					START 4:15
			SLY., f.-mg., m.h., m.		10.7	END 4:40
	11					TIME 25min
			gr 0.1, 5. br.cl @ 12.5			DRL 25min
	12				Box 4	RAN 5.0
			Mass below 12.5			REC 5.0
	13					LOSS Ø T/DEP 12.5
			w/occ mech. break			UNACC Ø DEP 13.0
						PULL #4 START 5:40
	14				13.9	T/DEP DEP 13.9 END 6:00
						TIME 20min
	15					DRL 20min
						RAN 1.4
	16				Box 5	REC 1.4
						LOSS Ø
						UNACC Ø
						PULL #5
	17					START 6:20
						END 6:59
					17.6	TIME 39min
478.3	18		Bottom Hole		Box 6	DRL 39min RAN 4.4
					18.3	T/DED DEP 18.3 REC 4.4
						LOSS Ø
	19					UNACC Ø
	20					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO M-19 STA 74+23

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-19/7

5. NAME OF DRILLER WAYNE TICE / DOWELL NORRIS

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 496.9

8. DEPTH DRILLED INTO ROCK 33.2

9. TOTAL DEPTH OF HOLE 463.7

10. SIZE AND TYPE OF BIT 4 5/8"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/7/89 COMPLETED 1/7/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 32.5 %

19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			CORE LOST. DUE TO REDRILL OF HOLE.		BOX 0-2.7 2.7- LOST HOLE	HOLE 1 DRILLED 12.6' HOLE CAVED IN. + REDRILLED/AFTER GROUT FIRST HOLE
495.8	1					PULL #1
	2		SLS M.H., M. dk. ge. u. bkn @ 9.0		BOX 2.	START 14:00 RAN 3.2 END 14:20 REC 3.2 TIME 20min LOSS 0 DRL 20min UNACC 0
	3		w/ POSS LC. U. BKN. @			DEP 3.2
	4		4.8 ± w/ POSS LC.			PULL #2 START 14:50 UNACC 0 END 14:57
491.9	5				4.8	TIME 7min DRL 7min
	6		SANDSTONE		BOX 3	RAN 2.4 T/DEP 5.6 REC 2.4 LOSS 0 DEP 6.4
	7		Slty., fig., m.h., m. gr			PULL #3
	8		PTG @ 7.1 w/ TR. gr. CL. COG, grading V. SA.		9.6	START 3:30 END 3:40 TIME 10 min DRL 10 min
	9		@ 9.7 PTg. w/ TR. gr.			RAN 5.0 REC 0.4
	10		CL @ 11.3 POSS LARGE			LOSS T/DEP 10.4 UNACC
	11		CORE LOSS below 11.3 + 14.1		BOX 4	
	12					
	13		BECOMING MASS below			
	14		14.1			DEP 14.1
	15				14.8	PULL #4 START 4:35 END 4:55
	16				BOX 5	TIME 20 min DRL 20 min RAN 4.6
	17					REC 8.3
	18				18.4	LOSS 2.8
	19				BOX 6	UNACC 2.8
	20		(CONT)		(CONT)	(CONT)

PROJECT GALLIPOLIS Lock & Dam			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		Box 6	Pull #5
	21					START 5:25
						END 6:10 LOSS —
474.6	22				22.3	TIME 35 min UNACC —
						DRL 35 min
	23		CLS/ICL			RAN —
					Box 7	REC 10.1
	24		M.-dk.gR.-S.-m.h w/			
						DEP/T/DEP 24.4
	25		VE.S. zos: bkn - 22.3-26.0			Pull #6
						START 6:45
						END 7:00 LOSS —
470.9	26				26.0	TIME 15 min UNACC —
			ICL			DRL 15 min
	27		gREENiSh gR.-R-bR,			RAN 3.3
						REC 2.9
	28		SLK. S.-m.h		Box 8	
						DEP/TDEP 27.7
	29		O.SLC (mech), 24.2-28.7			Pull #7
					29.5	START 1/17/89 11:00
	30		, 5 LC (mech)			END 11:15
						TIME 15 min
	31		28.7-33.2		Box 9	DRL 15 min
						RAN —
	32					REC 4.0
						LOSS ?
						UNACC ?
463.7	33		Bottom Hole		33.2	DEP 33.2
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67	GPO: 1969 OF—339-843	PROJECT GALLIPOLIS Lock & Dam	HOLE NO. M-19/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD		SHEET 1 OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Monolith M-20 Sta 3+80B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-20/1

5. NAME OF DRILLER David HARPER

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0.0 (496.8)

8. DEPTH DRILLED INTO ROCK 33.9

9. TOTAL DEPTH OF HOLE 462.9

10. SIZE AND TYPE OF BIT 4" X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/9/89 COMPLETED 1/9/89

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 33.9

19. SIGNATURE OF INSPECTOR JMD

ELEVATION 496.8	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			SANDSTONE m.g., m.h., m.gr, 0.2 gr.cl. sc e 1.3-1.5		Box 1	Pull #1 START 2:50 END 3:37 TIME 47 DRL 47 RAN 5.0 REC 4.3 LOSS .7 UNACC 0 TL Depth 5.0 TP Depth 4.7 DWR Good COLOR GRAY
494.8	2		ICL R.br, S., SLK, V.bKN, b7 L.C. BTWN 3.3 & 4.7			
	3				3.5	
	4					
492.1						4.7 T.Dep DEP 5.0
	5		SLS CLY-SH, m.h., m-dk.gr, CLY, bKN (much) 9.2 - 9.8		2	Pull #2 START 3:37 END 3:50 TIME 13 DRL 13 RAN 4.1 REC 7.1 LOSS e UNACC 0 DEP 9.1 TDEP 9.2 DWR GOOD COLOR GRAY
	6					
	7				7.6	
	8					
	9				3.	TDEP 9.2 DEP 9.1 Pull #3
487.0	10		SANDSTONE			(CONT)

PROJECT Gallipolis Locks + Dam

INSTALLATION ORH-CD

SHEET of 2 SHEETS 3

ELEVATION 486.8 a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		9.8 - 22.7		4.	Pull #3
			SANDSTONE - sLy., fig.,			START 4:00
			m. h., m. gr much. pTg		10.8	End 4:18
	11		@ 12.3			Time 18
						DRL 18
						RAN 4.8
						REC 1.8
						LOSS 0
	12					UNACC 0
						DWR-good
						COLOR GRAY
	13				5.	T-Dep
	14					DEP 13.9
					14.4	Pull #4
						START 4:30
						End 4:40
	15					Time 10
						DRL 10
						RAN 4.1
						REC 1.8
	16					LOSS 0
						UNACC 0
						DWR Good
						COLOR GRAY
	17				6	T DEP 14.9
	18				17.9	DEP 18.0
						Pull #5
						START 5:00
	19					End 5:18
						Time 18
						DRL 18
						RAN 4.3
					7	REC 9.3
	20					LOSS 0
						UNACC 0
					21.8	DWR Good
						COLOR GRAY
					8	Dep. 24.3
	21					TDep 24.0
	22		(CONT)		(cont)	(CONT)

DRILLING LOG (Cont Sheet)
ELEVATION TOP OF HOLE
496.8
Hole No. M-2011
SHEET
OF 3 SHEETS 3

PROJECT
Gallipolis Lock + Dam

INSTALLATION
ORH-CD

ELEVATION 471.8 a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22		SANDSTONE 9.8-22.7			Pull #5 START 5:00 End 5:18 SEE pg 2.
474.1						
	23		CLS - S- m.h, m. dk, gR 0.L gR. cL. se @ 23.4 22.7- 25.2		8	
	24					
	25					Pull #6 START 5:36 End 6:25
471.6					25.4	Time 49 DRL 49 RAN 8.5 REC 8.9 LOSS ∅ UNACC ∅ DEP 32.8 T-DEP 33.9 DWR Good COLOR GRAY
	26		ICL - GREENISH gR. - R. BR., S- SLT BKN. 25.2 - 33.9			
	27				9.	
	28					
	29				29.0	
	30					
	31				10.	
	32					
					32.5	DEP 32.8
	33					
462.9	34		Bottom Hole			T-DEP 33.9

PROJECT
Gallipolis Lock + Dam

HOLE NO.
M-2011

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono M-20 STA (6+70) B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-20/2

5. NAME OF DRILLER A. Tice / D. Norris

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.2

8. DEPTH DRILLED INTO ROCK 34.5

9. TOTAL DEPTH OF HOLE 462.7

10. SIZE AND TYPE OF BIT 4 x 5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER NA

16. DATE HOLE STARTED 1/9/89 COMPLETED 1/13/89

17. ELEVATION TOP OF HOLE 497.2

18. TOTAL CORE RECOVERY FOR BORING 34.5 %

19. SIGNATURE OF INSPECTOR JMN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			SANDSTONE			PULL #1
	1		m.-c.g., m.h., m.gr. v.bkn			START 10:05 LOSS 0.7
			0.0-3.0			END 10:25 UNACC 0.1
495.2	2				Box 1	TIME 15min
						DRL 15min
						RAN 2.4
			ICL			REC 2.3
	3		greenish gr-R.br., s			DEP 3.0
			SLK, ve.bk. 0.0-5.1			PULL #2
	4		w/ 1.9 LC.			START 10:37 REC 0.9
						END 10:50 LOSS 1.2
						TIME 13min UNACC
492.1	5				5.1	DRL 13min
						RAN 2.4
			CLS			DEP 5.1
	6		S, m.h., m.-dk.gr		Box 2	PULL #3
						START 10:55 RAN 2.7
						END 11:10 REC 1.9
490.2	7					TIME 15min LOSS 0
			SLS			DRL 15min UNACC 0
	8		S.-m.h., m.dk.gr		8.5	DEP 7.0
						PULL #4
						START 12:00 RAN 2.7
	9				Box 3	END 12:34 REC 2.0
487.5						TIME 12min LOSS 0
	10					DRL 12min UNACC 0
			SANDSTONE			DEP 9.0
	11					PULL #5
			SLy, fig, m.h., m.gr		12.1	START 12:55
	12					END 13:14
			Occ ve SLy			TIME 19 min
	13					DRL 19 min
					Box 4	RAN 13.3
	14					REC 6.0
						LOSS 0
	15					UNACC 0
					15.7	DEP 15.0
	16					PULL #6
	17				Box 5	START 13:30
						END 13:48
	18					TIME 18 min
						DRL 18 min
	19					RAN 23.1
					19.3	
	20		(Cont)		Box 6 (Cont)	(Cont)

| PROJECT GALLIPOLIS LOCK & DAM | | INSTALLATION ORH-CD | | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANdsTONE		Box 6	PuLL #6
	21		(cONT)			REC 8.5
						LOSS 0
	22					UNACC 0
474.4					22.8	
	23		CLS			DEP 23.5
	24		S-. m.h., m.-dk.gR		Box 7	PuLL #7
	25		VE bKN. 22.8 - 23.5			START 14:26
			gRADing INto			END 15:00
	26					TiME 24. min
470.6					26.4	DRL 24 min
	27		ICL			RAN 29.8
					Box 8	REC 6.3
	28		R.bR., S.-ml.b, SLK			LOSS 0
	29		Dtgs bKN w/1z			UNACC 0
	30		L.C btwn. 29.8 & 34.5.		29.8	DEP 29.8
						PuLL # 8
	31					START 15:35 UNAcc 1.2
	32				Box 9	END 15:55
						TiME 20min
	33					DRL 20min
						RAN 34.5
	34					REC 3.5
462.7			Bottom HOLE			LOSS 0
					34.5	DEP 34.5
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

| ENG FORM 1836-A JUN 67 | GPO: 1969 OF—329-242 | PROJECT GALLIPOLIS LOCK+DAm | HOLE NO. M-20/2 |

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CP	SHEET OF 3 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO M-21 / STA 6+88

3. DRILLING AGENCY W.G. JAQUS

4. HOLE NO. (As shown on drawing title and file number) M-21/1

5. NAME OF DRILLER David Harper

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 497.5

8. DEPTH DRILLED INTO ROCK 33.7

9. TOTAL DEPTH OF HOLE 463.6

10. SIZE AND TYPE OF BIT 4Y5YL

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN NA | **DISTURBED** NA | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 7

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/10/85 COMPLETED 1/10/85

17. ELEVATION TOP OF HOLE 497.5

18. TOTAL CORE RECOVERY FOR BORING 33.9 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.5			SANDSTONE			Pull #1
						START 7:30
			M.G, M.h, M.gr			END 7:45
	1		6 KM 0.0-2.8			TIME 15min
						DRL 15min
					1	RAN 5.0
	2					REC 4.3
						LOSS 0
494.7						UNACC 0
	3		ICL			
			R.br-greenish			
			gr S, SLK V.S @		5.7	
	4		contact 2.8			
						I/Dep 4.3
	5					D-P 5.0
491.8						Pull #2
					2	START 8:29
	6		SHS			END 8:40
			M-dr.gr, S-M.h.			TIME 11min
			V.blkn throughout			DRL 11min
	7					RAN 4.6
					2.3	REC 5.0
						LOSS 0
	8					UNACC 0
488.7					3	
	9		SANDSTONE			T/Dep 9.3
			(CONT)			D-P 9.6
						Pull #3
	10				(Cont)	(Cont)

PROJECT	INSTALLATION	SHEET 2
GALLIPOLIS LOCK & DAM	ORH-CD	OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10					PULL #3
					3	START 9:03
						END 9:35
	11				11.0	TIME 32min
			SANDSTONE			DRL 32min
						RAN 3.5
	12		sly, f.g., m.h., m.ge.			REC 5.2
			bkn. v sly 8.8-9.6			LOSS 0
						UNACC 0
	13		mech ptgs @ 20.7,		4	
			21.3, 21.6, 21.7, 30.3			
			30.8 31.1 C.1 2.C			T/DCP 13.5
	14		btwn 14.5-15.7			
					14.5	DCP 14.5
	15					PULL #4
						START 9:45
						END 9:55
						TIME 10min
	16					DRL 10min
						RAN 6.1
					5	REC 9.3
						LOSS 0.1
	17					UNACC 0.1
	18				15.3	
	19					T/DCP 18.5
						DCP 19.1
					6	PULL #5
	20					START 10:00
						END 10:15
						TIME 15min
						DRL 15min
	21					RAN 4.2
						REC 5.2
						LOSS 0
	22		(CONT)		21.9	UNACC 0 (CONT)

ENG FORM 1836-A JUN 67   GPO: 1966 OF—329-245

PROJECT	HOLE NO.
GALLIPOLIS LOCK & DAM	M-2111

DRILLING LOG (Cont Sheet)				ELEVATION TOP OF HOLE 497.5			Hole No. M-21/1	
PROJECT Gallipolis Lock & Dam				INSTALLATION ORH-CD			SHEET 3 OF 3 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d		% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	22		SAND STONE				PULL #5	
474.9								
	23		CLS M-dk. GR. S., SLY V bKN. 22.6-23.8			7		
	24		GRADING INTO ICL				T/DCP 23.8 DCP 29.1 PULL # 6	
472.8							START 10:30	
	25		ICL				END 10:45 TIME 15 MIN	
			R. bR - GREENISH GR., S.-SLK.			25.4	DRL 15 MIN PAN 5.4	
	26		C.Z. LC L'TWN 24 1/2 29.3 1.1 LC. L'TWN 29.3 33.9				REC 5.0 LOSS 0.2 UNACC 0.2	
	27					8		
	28							
	29							
	27					29.3	DCP 29.3 T/DCP 29.2 PULL # 7	
	30						START 11:00 END 11:20	
	31					9	TIME 20 MIN DRL 20 MIN PAN 4.8 REC 3.5	
	32						LOSS 1.1 UNACC 1.1	
	33							
463.5	34		Bottom Hole			33.9	DCP 40.0 DCP 33.5	

ENG FORM 1836-A
JUN 67

GPO: 1968 OF—329-243

PROJECT Gallipolis Lock & Dam   HOLE NO. M-21/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		HOLE NO.	SHEET 1 OF 4 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono M-21 STA 6+28B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-21/2

5. NAME OF DRILLER A. TICE / D. NORRIS

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.5

8. DEPTH DRILLED INTO ROCK 37.5

9. TOTAL DEPTH OF HOLE 460.0

10. SIZE AND TYPE OF BIT 4" X 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL M-53 mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/9/89 COMPLETED 1/9/89

17. ELEVATION TOP OF HOLE 497.5

18. TOTAL CORE RECOVERY FOR BORING 37.5

19. SIGNATURE OF INSPECTOR J.M.A.

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.5			SANDSTONE m.g., m.h., m.gr. U.bkn 0.0-1.4			Pull #1
	1					START 13:45
496.1						END 14.05
			ICL			TIME 20 min
	2		k.br. greenish gr., s.; SLK v bkn, w/l.c Lc btwn 1.4 - 4.5		1	DRL 20 min
						LRN 4.5
	3					REC 3.5
						LOSS 1.0
	4					SMRE Ø
493.0				4.5		DEP 4.5
	5		CLS S. m.h., m.dk.gr Grading into SLS			Pull 2
491.7						START 14:10
	6		SLS SH, m-dk.gr.; m.h.		2	END 14:35
						TIME 25 min
						DRL 25 min
	7					LRN 5.0
490.1						REC 5.0
			SANDSTONE			LOSS Ø
	8		FLY-F.gr., m.h. m.gr			SMRE Ø
	9			2.4	3	
485.0						DEP 2.5
	10		CLS (CONT)		(cont)	Pull #3 (CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam HOLE NO. M-21/2

| | | | | | | SHEET 2 OF 4 SHEETS |

PROJECT Gallipolis Lock & Dam   **INSTALLATION** ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	10		CLS			Pull #3
	11		DK. ge. w/ss lens v bkn wl.9 l.c.		4	START 14:50 END 15:02 TIME 12min DRL 12min RHN 6.0 REC 5.1 LOSS .9
485.0	12				12.6	UNACC 0
	13		SANDSTONE			
	14		SLY, Fg, M.h,		5	
	15		M.gr Mass			
	16				16.0	DEP 15.5 Pull #4
	17					START 15:20 END 15:28 TIME 8min DRL 8min RAN 4.3 REC 4.3
	18				6	LOSS 0 UNACC 0
	19				19.6	
	20					Pull #5
	21				7	
	32		(Cont)		(cont)	(cont)

GPO: 1969 OF—339-343

PROJECT Gallipolis Lock & Dam   **HOLE NO.** M-21/2

| PROJECT *Gallipolis Lock & Dam* | INSTALLATION *ORH-CD* | | | | | SHEET *3* OF *4* SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	22					
475.4			CLS		7	PULL #5
	23		M-dk.gr., s-m.h bkn		22.9	START 16:00
						END 16:40
						TIME 40 min
						DRL 40 min
	24					RAN 8.8
473.3						REC 8.7
			SLS m. dk gr. s,-m.h bkn		8	LESS ,,
	25					WWHCC 0
	26					
472.0					26.6	
	27		ICL			
			R.br. greenish			
	28		gr., s. slk			
					9	DEP 28.5
	29					PULL #6
	30				30.1	START 17:20
						END 17:50
						TIME 30 min
	31					DRL 30 min
						RAN 7
						REC 9
	32				10	LESS 0
						WWHCC 0
	33					
	34		(CONT)		33.7	(CONT)

ENG FORM 1836-A
JUN 67   GPO: 1968 OF—329-342

| PROJECT *Gallipolis Lock & Dam* | HOLE NO. *M-21/2* |

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 497.5					Hole No. M-21/2
PROJECT GALLIPOLIS LOCK & DAM			INSTALLATION ORH-CD			SHEET 4 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	34					Pull #6
			ICL			
	35		R. br - GREENISH			
			gr., S. SLK		10	
	36					
	37					
460			Bottom Hole		37.5	DEP. 37.5
	38					
	39					
	40					

ENG FORM 1836-A
JUN 67

GPO: 1968 OF—329-242

PROJECT GALLIPOLIS LOCK & DAM	HOLE NO. M-21/2

DRILLING LOG	DIVISION	INSTALLATION	
	ORD	OPH-CD	

1. PROJECT Gallipolis Lock + Dam

10. SIZE AND TYPE OF BIT 4 x 5½

2. LOCATION (Coordinates or Station) MONO M-22 STA 6+80

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL.

3. DRILLING AGENCY W.G. Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL B-53

4. HOLE NO. (As shown on drawing title and file number) M-22/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

5. NAME OF DRILLER Dave Harper

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☒VERTICAL ☐INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 1/10/89 COMPLETED 1/10/89

7. THICKNESS OF OVERBURDEN 0 497.9

17. ELEVATION TOP OF HOLE 497.9

8. DEPTH DRILLED INTO ROCK 33.9

18. TOTAL CORE RECOVERY FOR BORING 33.9 %

9. TOTAL DEPTH OF HOLE 463.5

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.9			SANDSTONE			Pull #1
	1		Lt gr, -h. m-c.g. Col cem			START 7:20
496.0			bkn w/Fe stain 0.0-0.9			END 7:50
	2		CLS		1	TIME 30min
			gr. s. cl @ TOP TO SLT			DRL 30min
	3		@ bottom, ang pns w/slk			RAN 4.8
			3.0-3.1 severely bkn			REC 4.1
	4		w/poss loss 3.8-4.8		3.8	LOSS 0.7
492.6						UNACC 0.7 DEP 4.8
	5		SLS			Pull #2
	6		gr, s-m.h, g'xn'tntional		2	START 8:10
			w/sa @ bottom, severely			END 8:23
	7		bkn 4.8-6.2 high ang frac			TIME 15min
			6.3-7.0, 7.3-7.6, low ang			DRL 15min
	8		frac 15° w/slk 7.8-7.9		7.9	RAN 4.2 UNACC 0.4
			Fg ss 10.6-10.9			REC 3.8
	9					LOSS 0.4 DEP+TID=9.0
	10				3	Pull #3 START 8:40
						END 9:00
	11					TIME 20min DRL 20min
486.0					11.4	RAN 3.5 REC 3.5
	12		SANDSTONE			LOSS 0 UNACC 0
			gr-Lt gr., m.h-h. f-m.g.			D-04 + TID=12.5
	13				4	Pull #4 START 9:10
			Cal. cem, 11.9-13.4, high ang			END 9:35
	14					TIME 25min DRL 25min
	15		J.T. 45°, 13.1-13.4 bkn pns		14.9	RAN 3.8 REC 3.8
			w/ 0.5 spacing below 16.3			LOSS 0 UNACC 0
	16					D-04 + TID=16.3
	17				5	Pull #5 START 9:53
	18					END 10:17
					18.5	TIME 29min DRL 29min
	19				6 (cont)	RAN 8.9 REC 8.9
477.5	20					(CONT)

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS			PULL #5
	21		ge., S, Sh. BKN pns w/0.5		6	LOSS Ø
			SPACING CLS gr, S-VES.			UNACC'D
	22		22.9 - 23.5, BKN 29.3-29.7		22.1	
	23		25.2 - 25.7			
	24				7	
	25					DEPTH/DCP 25.2
	26				25.0	PULL #6
470.9						START 10:26 END 10:45 TIME 20 min DRL 20 min RAN 3.9 REC 3.2 LOSS 0.2 UNACC 0.2
	27		ICL		8	
	28		R.Br S-VES., occ. mottle			
			w/gr·gnsr, w/occ slk			DCP + T/DCP 28.6
	29		Slt + less R 28.9, clBeige		29.5	PULL #7 START 11:00
	30		BKN 27.8; 28.1, 39.1, mnl			END 11:40 TIME 40 min
	31		SPIN 23.0		9	CPL 40 min RAN 5.3
	32					REC 4.4 LOSS 0.9
	33					UNACC 0.9
463.5	34		Bottom Hole		33.9	DEPTH/DCP 33.9
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

DRILLING LOG

DIVISION	INSTALLATION	SHEET 1
OLD	OLH-CD	OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono M-22 STA 5+86 A

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-22/2

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.5

8. DEPTH DRILLED INTO ROCK 34.6

9. TOTAL DEPTH OF HOLE 463.9

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/9/89 COMPLETED 1/10/85

17. ELEVATION TOP OF HOLE 497.5

18. TOTAL CORE RECOVERY FOR BORING 34.6

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.5			SANDSTONE			Pull #1
	1		LT.GR. H.-M.H m-c.9			START 8:15
	2		CAL, CEM, slightly BKN 0.-1.0		1	END 8:35
						TIME 20 min
	3		BKN pdts. w/0.3 Spce 1.0			DRL 20 min
497.2						RAN 5.0
			CLS			REC 5.0
	4		gr, S, occ, mottled w/r-Bl		39	LOSS Ø
	5		mod, BKN, Throughout			UNACC Ø
	6		severely BKN 3.9-4.1 4.7-5.0		2	50
						Pull #2
490.3	7		5.4-5.7		7.2	START 8.90
			SLS			END 10.00
	8		gr. S-M.H. gradational			TIME 80 min
	9		w/sh @ Top to sa @ Bottom		3	DRL 25 min
	10		BKN @ 8.0-8.1, 9.1-9.3			RAN 10.1
	11		sh seam 17.8-17.9		11.0	REC 9.7
	12		sa below 15.4			LOSS Ø
	13					UNACC Ø
	14				4	
	15				14.7	TIDE p.m.? DEP 15.1
	16				5	Pull #3
						START 10.45
	17					END 11.15
						TIME 30 min
479.5	18				18.2	DRL 30 min
			SANDSTONE		6	RAN 10.0
	19		LT.GR., M.H. m-F.gr,		(CONT)	REC 10.0
			CAL CEM below 20.0			LOSS Ø
	20		CONT			UNACC Ø (CONT)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   (TRANSLUCENT)

PROJECT Gallipolis Lock+Dam   HOLE NO. M-22/2

DRILLING LOG (Cont Sheet)				ELEVATION TOP OF HOLE 497.5			Hole No. M-22/2		

PROJECT GAllipolis Lock + DAm

INSTALLATION ORH-CD

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			Pull #3
	21				6	
475.8					21,9	
	22		SLs			
	23		QR., S-m.H. Sh, bKn,			
	24		23.8-29.1		7	
	25					T/Dr of D-P 24.6
					25.5	Pull #4
	26					START 7:48
						END 8:21
470.5	27					TIME 33 min
			I CL		8	DRL 33 min
	28		R-BR, S-M.H. mottled			RAN 4.9
						REC 4.9
	29		W/GR-G N.GR, num SLK		28.9	LOSS Ø
						UNACC Ø
	30		+ FRACtures, SLT			D-P + T/D-P 29.6
						Pull #5
	31		BKN (mech) 29.6-29.9		9	START 8:40
	32					END 9:19
					32.9	TIME 39 min
	33					DRL 39 min
						RAN 5.0
	34				10	REC 5.0
462.9			Bottom Hole		34.6	LOSS Ø
	35					UNACC Ø
	36					D-P + T/D-P 34.6
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A   JUN 67   (ER 1110-1-1801)   GPO 1990 OF-628-603

PROJECT GAllipolis Lock + DAm

HOLE NO. M-22/2

DRILLING LOG	DIVISION OPD	INSTALLATION ORH-ED	SHEET 1 OF 2 SHEETS

1. PROJECT GAllipolis Lock + DAm

10. SIZE AND TYPE OF BIT 4 x 5½

2. LOCATION (Coordinates or Station) MONO M-23 STA 5+76B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. 6 JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) M-73/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE

14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/17/89 COMPLETED 1/17/89

7. THICKNESS OF OVERBURDEN Ø 497.3

17. ELEVATION TOP OF HOLE 497.3

8. DEPTH DRILLED INTO ROCK 34.6

18. TOTAL CORE RECOVERY FOR BORING 34.6 %

9. TOTAL DEPTH OF HOLE 462.7

19. SIGNATURE OF INSPECTOR SMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.3			SANDSTONE			PULL #1
	1		F-mi.gr, gr. Joccclon PARTings		1	START 12:47 END 12.57 TiME 10min DRL 10min PAN 4.7 REC 4.4
	2					
494.1	3			3.5		Loss 0.3 UNACC 0.3
	4		ICL RED BR-gr F.gr M.H			
	5				2	DCP 4.7 PULL #2 START 13:01 END 13.38 TiME 37min
491.2	6					DRL 37min PAN 10.0 REC 10.0
	7		SLS M-dkGN-gr F. vcf.gr ThinBd, clon PARTings + on VERTicAL FAces	6.8		
	8				3	Loss Ø UNACC Ø
	9					
	10					
	11			10.7		
	12				4	
	13					
	14			14.4		
	15					DCP 14.8 PULL #3
	16				5	START 13:53 END 14:11 TiME 18min DRL 18min
	17					PAN 8.3 REC 8.0
	18			12.8		Loss 0.3
	19				6	UNACC 0.3
	20		(CONT)		(cont)	(CONT)

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	ELEVATION TOP OF HOLE			Hole No. *M 23/1*		
				497.3		

PROJECT				INSTALLATION		SHEET 2
GALLiPOLIS LOCK+DAM				ORH-CD		OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS			PULL #3
	21				6	
	22				21.8	
	23					DEP 23.1
	24				7	PULL #4
						START 19:24
	25				25.2	END 19:56
						TIME 32min
471.3	26					DRL 32min
			ICL			PAN 5.3
	27		R-BR, GN-GR, FG. M.H.		8	REC 5.3
			OCC, SLK.			LOSS Ø
	28					UNACC Ø
	29				28.9	
	30					
	31				9	
	32					
					32.4	DEP 32.4
	33					PULL #5
						START 15:08
					10	END 15:23
	34					TIME 15min
462.7			BOTTOM HOLE		34.6	DRL 15min
	35					PAN 2.2
						DEP 34.6
	36					REC 2.2
	37					LOSS Ø
						UNACC Ø
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67	(ER 1110-1-1801)	GPO 1980 OF - 628-603	PROJECT GALLiPOLIS Lock+DAm	HOLE NO. M-23/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO M-23 STA 5+44 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-23/2

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.1

8. DEPTH DRILLED INTO ROCK 34.6

9. TOTAL DEPTH OF HOLE 462.5

10. SIZE AND TYPE OF BIT 4" R 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN / **DISTURBED** N/A / **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/17/89 COMPLETED 1/17/89

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 34.6

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SANDSTONE		Box 1	Pull #1
	1		M-C.g., m.h., m.gr			START 1:43
			V.BKN, 0.0-3.2 w/0.2			END 1:50
	2		L.C 0.2 m.gr, S.CL.			TIME 7 min
			4.3-4.5			DRL 7 min
	3					RAN
					3.5	REC 4.3
492.8	4					LOSS 0.2
					Box 2	UNACC 0.2
	5		CLS			DEP 5.0
			S. m.h, m.-dk.gr.			Pull #2
	6		PTs shy m.SPACED			START 2:00
			hor ptgs. 0.4 L.C.		6.6	END 2:13
	7		btwn 4.5 & 9.4			TIME 12 min
			grading Into			DRL 13 min
	8				Box 3	RAN
						REC 4.5
	9					LOSS 0.4
						UNACC 0.4 T/DEP 9.4
	10					DEP 9.8
					10.3	Pull #3
	11					
					Box 4	START 2:22
	12					END 2:40
						TIME 18 min
	13					DRL 18 min
						RAN
482.8	14				13.9	REC 8.9
			SLs/ss			LOSS 0.2
	15		m-dk.gr., s.-m.h, PTs			UNACC 0.2
			shy, ss-shy.fig., m.h.		Box 5	
	16		m.gr, 80° 0, IRR			
	17		JT. 14.3-15.2 0.2 SA			
			LENS @ 16.3 0.2 L.C.		17.6	
	18		btwn 9.4 & 18.5 m.			
			SPACED hor ptgs		Box 6	T/DEP 18.5
	19		w/occ cl coa.			DEP 18.9
	20		(CONT)		(CONT)	Pull #4 (CONT)

PROJECT GALLIPOLIS LOCK & DAM   HOLE NO. M-23/2

PROJECT							SHEET 2
Gallipolis Lock & Dam			INSTALLATION ORHCD				OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/SS		Box 6 20.9	Pull #4
	21					
475.1	22					START 2:50
			CLS		Box 7	END 3:24
	23		S. m.h , m.-dk. gr			TIME 34 min
			SPACED PTGS MAY.5			DEL 34 min
473.1	24		0.1 LC BTWN 18.5 & 25.2			RAN
						REC 6.6
	25		IcL		24.8	LOSS 0.1
						UNACC 0.1 T/DEP 25.2
	26		greenish-gr - R-br.s. mech: BKN		Box 8	
	27					DEP 26.9
			V.S. 25.2 - 27.0			Pull #5
	28				27.9	START 3:35 END 3:50
			V. BKN. 29-30.3 (mech)			TIME 15 min DEL 15 min
	29				Box 9	RAN 5.2 REC 5.2
	30		0.1 L.C btwn 30.4			LOSS 0 UNACC 0
			& 34.6			T/DEP 30.3 DEP 30.4
	31					Pull #6 START 4:35
	32				34.6	END 4:45
						TIME 10 min DEL 10 min
	33				Box 10	RAN 4.9 REC 4.5
	34					LOSS 0.1 UNACC 0.1
462.5			Bottom HOLE		34.6	T/DEP 34.6
	35					DEP 35.2
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

PROJECT Gallipolis Lock & Dam   HOLE NO. M-23/2

DRILLING LOG	DIVISION OPD	INSTALLATION ORH-LD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO M-24 STA 57.34B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-24/1

5. NAME OF DRILLER DOWELL NORRIS

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 493.7

8. DEPTH DRILLED INTO ROCK 37.0

9. TOTAL DEPTH OF HOLE 456.7

10. SIZE AND TYPE OF BIT 4" X 55"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/17/89 COMPLETED 1/17/89

17. ELEVATION TOP OF HOLE 493.7

18. TOTAL CORE RECOVERY FOR BORING 37.0 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
493.7	1		SANDSTONE		Box 1	Pull #1
	2		m.-c.g., m.h., m.gr Closely spaced bdd			START 3:55 END 4:20 TIME 25min
	3		PLN. PTgs 0.0-2.0 0.2 cl. SC @ 5.7-5.9 4/0.1		3.8	DRL 25min RAN 4.8 REC 5.3
	4		L.C.			LOSS – UNACC –
488.0	5				Box 2	DCP 5.3
	6		ICL/CLS			Pull #2
	7		S.-m.h., m.-dk.gr w/occ hor PTg.		7.4	START 4:25 END 4:50 TIME 25 min
	8					DRL 25 min
484.8	9		SLS		Box 3	RAN 10.0 REC 9.8 LOSS 0.1
	10		SQ, m.-dk gr. m.h. w/			UNACC 0.1
	11		occ. S.S. Lens ± 20 m.		11.3	
	12		SPACED shy PTgs		Box 4	
	13		grading more SA. w/			
	14		depth.		14.6	DCP 14.6 TIDED DK?
	15					Pull #3
	16				Box 5	START 5:05
	17					END 5:25 TIME 20min
	18				18.5	DRL 20 min RAN 10.0
	19				Box 6	REC 9.1 LOSS .5
	20				CONT	UNACC .5 (CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT GALLIPOLIS Lock & Dam | HOLE NO. M-24/1

PROJECT								
Gallipolis Lock & Dam				INSTALLATION ORH-CD				SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		Box 6	Pull #3 (cont)
	21		shy, fig., m.h., m.gr			
972.0						
	22		CLS		22.1	
	23		M: dk. gr., S. - m.h., w/		Box 7	
	24		closely spaced ptgs occ.			T/DEP 24.3
	25		gr CL. COA : 0.5 LC			DEP 24.8
	26		prob below 21.7		25.8	Pull #4
	27		grading into ICL		Box 8	START 5:45
						END 6:10
						TIME 25 min
	28					DRL 25 min
	29					RAN 9.5
						REC 9.0
						LOSS 0.7
463.9					29.5	UNACC 0.7
	30		ICL			
	31		R. br., S.- m.h., SLK		Box 9	
	32		0.7 cc. between 24.3 {			
	33		34.0		32.9	
	34					T/DEP 34.0
	35				Box 10	DEP 34.5
						Pull #5
						START 6:45
						END 6:50
						TIME 5 min
	36					DRL 5 min
						RAN 3.0
						REC 3.3
456.7	37		Bottom Hole		37.0	LOSS ∅ T/DEP 37.0
	38					UNACC ∅ DEP 37.7
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67	GPO: 1969 OF—329-243	PROJECT Gallipolis Lock & Dam	HOLE NO. M-24/1

1. PROJECT	10. SIZE AND TYPE OF BIT 4" X SS"
GALLIPOLIS LOCK + DAM	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
2. LOCATION (Coordinates or Station)	M.S.L.
MONO 11-24 STA 5+02 B	12. MANUFACTURER'S DESIGNATION OF DRILL
3. DRILLING AGENCY	B.-53 MOBILE
W. G. JAQUES	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
4. HOLE NO. (As shown on drawing title and file number) M-24/2	
5. NAME OF DRILLER	14. TOTAL NUMBER CORE BOXES 10
STEVE FRY	15. ELEVATION GROUND WATER N/A
6. DIRECTION OF HOLE	16. DATE HOLE — STARTED 1/17/89 — COMPLETED 1/17/89
☒VERTICAL ☐INCLINED _____ DEG. FROM VERT.	
7. THICKNESS OF OVERBURDEN ∅ 493.3	17. ELEVATION TOP OF HOLE 493.3
8. DEPTH DRILLED INTO ROCK 36.1	18. TOTAL CORE RECOVERY FOR BORING 36.1 %
9. TOTAL DEPTH OF HOLE 457.2	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc, if significant) g
493.3			SANDSTONE			Pull #1
	1		m.-c.g., m.h., m.gr.		Box 1	START 5:03
			STA. 0.0-1.5; LEA LT.gr.			END 5:20
	2		1.5.-3.5; bKN 0.0-1.5;			TIME 17min
						DRL 17min
	3					RAN 5.0
					3.8	REC 4.9
	4					LOSS —
						UNACC —
488.3	5					DEP 5.0 T/DEP 4.9
			CLS/ICL -S. m.h., m		Box 2	Pull #2
	6		-dk.gr. V.E.S. 5.0-6.3 ¾ 41.S.			START 5:40
			bKN @ 7.3-7.5 Closely			END 6:04
	7		SPACED PL3s w/TR.gr.cl.		7.5	TIME 16min
			LENS 7.9-8.6 grading			DRL 16min
	8		into SLS			RAN 5.2
484.7						REC 4.1
	9		SLS		Box 3	LOSS 0.4
			SA, S.-m.h., m-dk.gr			UNACC 0.4 T/DEP 9.4
	10		PTS Shy.: bKN 9.4-			DEP 10.2
			9.8 (mech) w/0.2 LC.		11.4	Pull #3
	11		grading Sa @ 11.6			START 6:20
			Shy. DT9 @ 12.7 & 13.3			END 6:34
	12		0.1 LC. (Prob mech)		Box 4	TIME 14min
			@ 14.0); Sa contact			DRL 14min UNACC 0.2
	13		increasing w/depth			RAN 4.0
			; grading into SS.			REC 4.4
	14					LOSS 0.2
					15.0	DEP 14.0 T/DEP 14.0
	15					Pull #4
						START 6:45
	16					END 7:00
					Box 5	TIME 15min
	17					DRL 15min
475.7						RAN 4.8
	18		SANDSTONE		18.5	REC 4.7
			Shy, f.g, m.h., m.gr.			LOSS 0.1
	19		0.1 S.gr. CL.15.8-15.9		Box 6	UNACC 0.1 T/DEP 18.8
			CLOSELY SPACED (mAX.6)			DEP 19.0
	20		(Cont)		(Cont)	Pull #5 (Cont)

PROJECT *Gallipolis Lock & Dam*				INSTALLATION *ORH-CD*			SHEET *2* OF *2* SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOV.	BOX OR SAMPLE NO.	REMARKS
	20		SANDSTONE PTGS 19.2-21.1 grading			Pull #5
472.1	21				6	START 7:10
	22		CLS S.-m.h, m-dk.gr			END 7:30
	22		U.S. 22.8-23.8; 24.1-		22.1	TIME 20 min
	23		24.4 :; 26.0-27.0 w/ 0.1 LC.			DRL 20 min
	24				7	RAN 5.1 REL 5.0 LOSS — UNACC — DEP 29.1 T/DEP 28.8
	25				25.4	Pull #6 START 7:44
	26				8	END 7:55 TIME 11 min DRL 11 min RAN 4.9 REC 4.4 LOSS 0.1
	27					UNACC 0.1 TDCP/ 28.3
465.3	28				28.8	DEP 27.0
	29		ICL			Pull #7 START 8:40
	30		Greenish gr.-R. br. SLK S.-m.h. bkn 0.2 LC BTWN 33.7; 36.1		9	END 8:53 TIME 13 min DRL 13 min RAN 4.8 REC 5.4 LOSS 0 UNACC 0
	31					
	32				32.6	
	33					DEP/T/DCP 33.0
	34				10	Pull #8 START 7:25 END 9:38 LOSS 0.2 TIME 13 min UNACC 0.2 DRL 13 min
	35					RAN ? REC 2.2 T/DCP 36.1
457.2	36		Bottom Hole		36.1	
	37					DEP 37.0
	38					
	39					
	40					
	41					
	42					
	42					

ENG FORM 1836-A
JUN 67

GPO: 1968 OF—329-245

PROJECT *Gallipolis Lock & Dam*   HOLE NO. *M-24/2*

DRILLING LOG	**DIVISION** ORD	**INSTALLATION** ORH-CD	**SHEET** 1	**OF** 2 **SHEETS**

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono M-25 STA 4+92 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-25/1

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 493.3

8. DEPTH DRILLED INTO ROCK 37.3

9. TOTAL DEPTH OF HOLE 4560

10. SIZE AND TYPE OF BIT 4 x 5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/17/89 COMPLETED 1/17/89

17. ELEVATION TOP OF HOLE 493.3

18. TOTAL CORE RECOVERY FOR BORING 37.3 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
493.3			SANDSTONE			Pull #1
	1		m.-l.g., m.h., m.gr.			START 7:15
			BKN 0.0-2.0 w/0.1 L.C			END 7:30
	2				1	TIME 15 min
						DRL 15 min
	3					RAN 4.9
						REC 4.6
	4				3.9	LOSS 0.1
488.6						UNACC 0.1
						T/DEP 4.7
	5		CLS			DCP 4.9
			m.-dk.gr, s.-m.h.		2	
	6		v.s. 4:7-6.0			Pull #2
			grading			
	7				2.3	START 7:35
486.0						END 7:50
	8		SLS			TIME 15 min
			SA., m.-dk.gr, s-m.h.			DRL 15 min
	9		misposssed, hor, pfgs			RAN 10.0
			(max. length 0.8)		3	REC 9.6
	10		grading sandy @ 9.6			LOSS —
			hor pfg. @ 11.8			UNACC —
	11		; 13.4; 15.2; grading		11.1	
	12					
	13				4	
	14					
					14.3	T/DEP 14.3
	15					DCP 14.9
477.5						Pull #3
	16		SANDSTONE		5	START 8:40
			sky., fig., m.h., m.gr			END 9:05
	17		bkn w/hor, irr, o.jt.			TIME 25 min
			15.8-17.9; same 19.0			DRL 25 min
	18		-20.4; grading.		18.1	RAN 9.7
						REC 10.5
	19				6	LOSS —
						UNACC —
	20		(cont)		(cont)	(cont)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

(TRANSLUCENT)

PROJECT Gallipolis Lock & Dam	**HOLE NO.** M-25/1

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 493.3		Hole No. M-25/1			
PROJECT GALLIPOLIS LOCK & DAM			INSTALLATION ORH-GD		SHEET 2 OF 2 SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
472.9	20				6	Pull #3
	21		CLS			
	22		SLy. S.-m.h., m.-dk		21.9	
			gR SLi WEA hor			
	23		ptgs 23.7 & 23.9:			
			gRading into		7	
	24					
	25				25.2	DEPTH/DER 24.6
	26					Pull #4
466.9						START 9:05
	27		ICL		8	END 9:40
						TIME 35 min
	28		GREENish gR.-R.bR.,			DRL 35 min
			S- m.h. SLK, BKN			RAN 9.1
	29		Throughout		28.8	REC 9.1
			0.6 LC bTwn 24.8 &			Loss 0.6
	30		34.3 0.3 L.C. Btwn			UNACC 0.6
			34.3 & 37.3			
	31				9	
	32					
	33				32.6	
	34					T/DEP 33.7
	35				10	DEP 56.3
						Pull #5
	36					START 10:15 REC 2.7
						END 10:20 Loss 0.3
						Time 5min UNACC 0.3
						DRL 5min
456	37		Bottom HOLE		37.3	RAN 30 T/DEP 37.3
						DEP 37.7
	38					
	39					
	40					
	41					
	42					
	44					
	45					

ENG FORM 1836-A JUN 67	GPO 1965 OF—320-242	PROJECT GALLIPOLIS LOCK & DAM	HOLE NO. M-25/1

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4½ SS*	
	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L	
2. LOCATION (Coordinates or Station) Mono M-25 STA 4+60 B	12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile	
3. DRILLING AGENCY W. G. Jaques	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED NA	UNDISTURBED N/A
4. HOLE NO. (As shown on drawing title and file number) M-25/2	14. TOTAL NUMBER CORE BOXES 11	
5. NAME OF DRILLER Steve Fry	15. ELEVATION GROUND WATER N/A	
6. DIRECTION OF HOLE ☐ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	16. DATE HOLE STARTED 1/17/89	COMPLETED 1/18/89
7. THICKNESS OF OVERBURDEN 0 497.2	17. ELEVATION TOP OF HOLE 497.2	
8. DEPTH DRILLED INTO ROCK 36.0	18. TOTAL CORE RECOVERY FOR BORING 36.0 %	
9. TOTAL DEPTH OF HOLE 461.2	19. SIGNATURE OF INSPECTOR JMD	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			SANDSTONE			Pull #1
	1				Box 1	START 10:00
			m.c.g., m.h., m.gr			END 10:15
	2					TIME 15 min
			STA. br. 0.0-1.0			DRL 15 min
	3					RAN 4.5
						REC 4.5
493.7	4			3.9		LOSS 0
			ICL			UNACC 0 T/DEP 4.5
	5				Box 2	DEP 5.0
			S, SLK., R.br., -greenish			Pull #2 START 10:20
	6					END 10:32
			gr. grading into			TIME 12 min
490.2	7			7.2		DRL 12 min RAN — T/DEP 7.0
			SLS			REC 4.3
	8					LOSS 0
			S. -m.h., m-dk.gr.,			UNACC 0
	9				Box 3	DEP 8.8 Pull #3
			PTS. Shy. s.gr. cl.			
	10					START 10:40
			7.5-7.7; bkn 11.8-12.4	10.2		END 10:52 TIME 12 min
	11					DRL 12 min
						RAN 5.1
484.5	12				Box 4	REC 5.1
	13		SS/SLS Interbdd			LOSS 0 UNACC 0
	14			13.9		T/DEP 13.2 DEP 14.
			SS. - lig., m.h., m.gr			Pull #4
	15		CLS-s, m.h., m.dk.ge.		Box 5	START 11:00 END 11:16
	16		Shy. SS 12.4-15.3: cls/sls			TIME 16 min DRL 16 min
	17		15.3-16.0. SS 16.0-17.0 : 1"	17.7		RAN 5.4 REC 5.3
	18		s.gr. cl.@ 17.0 · SLS 17.0-19.1		Box 6	LOSS 0.1 UNACC 0.1
	19		: 0.1 Lc B/wn 13.9 & 19.3			DEP 19.3 T/DEP 19.2
	20		(cont)	19.8		Pull #5 (CONT)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

(TRANSLUCENT)

| PROJECT Gallipolis Lock & Dam | HOLE NO. M-25/2 |

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DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 497.2				Hole No. M-25/2	
PROJECT GALLipoLis Lock + Dam	INSTALLATION OBH-CD				SHEET OF SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.7	20		SSTCL GRAding iNto		Box 7	PuLL #5
	21		CLS			START 7:35
	22		S·m.h., m-dk.gr.			END 8:16
	23		pts shy w/cl.se.			TIME 41min
			SPAced ptgs.w/avE.02		23.5	DRL 41min
	24		.05 L.C. (mech) btwn			RAN —
			19.3 ± 28.0			REC 8.2
	25				Box 8	LOSS ⊖
	26					UNACC ⊖
	27					
469.2	28				22.3	IDzP 28.0
	29		ICL		Box 9	DzP 28.9
	30		VE-br., S-m.h., slk		30.2	PuLL #6
						START 8:35
	31		bkN.			END 8:52 LOSS ⊖
	32				Box 10	TIME 13min UNACC ⊖
						DRL 13min
	33					RAN —
						REC 37 T/DzP 31.7
	34					DzP 32.9
					34.4	PuLL #7
	35				Box 11	START 9:08
						END 9:25
461.2	36		Bottom HoLE		36.0	TIME 27min
	37					DRL 27min
	38					RAN —
	39					REC 4.0
	40					LOSS 0.3
	41					UNACC 0.3 T/DzP 36.0
	42					DzP 36.5
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO: 1969 OF—329-343

PROJECT GALLipoLis Lock+Dam	HOLE NO. M-25/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono M-26 STA 4+50 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-26/1

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.2

8. DEPTH DRILLED INTO ROCK 38.8

9. TOTAL DEPTH OF HOLE 458.4

10. SIZE AND TYPE OF BIT 4 15 V₂

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/17/89 COMPLETED 1/18/89

17. ELEVATION TOP OF HOLE 497.2

18. TOTAL CORE RECOVERY FOR BORING 38.7 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2	1		SANDSTONE			PULL #1
			LT. GR. H, m-cg.			START 10:45
						END 10:50
	2		FE SURFACE STAIN 0.0-1.0			TIME 5min
					1	DRL 5min
	3		Slightly BKN 0.0-1.9			RAN 5.0
						REC 5.0
	4		CL-coated Bd Pn 2.9	39		LOSS Ø
492.5						UNACC Ø
	5		ICL		2	DEP 5.0 T/DEP 4.9
			Light BR. S. OCC BKN, GR			PULL #2
	6		4.7-5.0 FE STAINED SS 5.0-5.1			START 7:15
490.3	7		SLS			END 8:12
				79		TIME 57min
			GR, m.H-S, sa, BKN			DRL 57min
	8					RAN 10.0
			6.8-7.2, 8.5-8.7, 12.3-			REC 9.2
	9				3	LOSS Ø
			12.9			UNACC Ø
	10					
	11				11.3	
	12					
484.5	13		SANDSTONE		4	
	14		LT GR, m.H, F-mg.			
	15		OCC SLS FRAG OR inclusions			DEP 15.1 T/DEP 15.0
			16.1-16.8		155	PULL #3
	16					START 9:00
						END 9:25
	17				5	TIME 25min
						DRL 25min
479.2	18					RAN 9.5
			SLS			REC 9.5
	19		GR. m.H-S., sa ABOVE		191	LOSS Ø
					6 (CONT)	UNACC Ø
	20		(CONT)			(CONT)

PROJECT *GALLIPOLIS LOCK + DAM*			INSTALLATION *OPH-CD*			SHEET **2** OF **2** SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS			Pull #3
	21		23.0 + Sh Below, F.G		6	
	22		SS GR, M.H. 18.9-19.1, 21.0			
	23		21.3 BRN 23.9-24.2, 24.5		22.6	
	24		24.8 26.4-26.6, LT.R-BR		7	
	25		Below 27.0			T/DEP 24.5
	26				25.8	DEP 25.1
469.8	27					Pull #4 START 9:40 END 10:07 TIME 33min
	28		ICL R-BR, S-M.H, occasionally		8	DRL 33min RMV 9.7
	29		w/GR-NGR, DKGR ABOVE		29.5	REC 9.7 LOSS 0
	30		31.0, CL ABOVE 31.7 +			UNACC 0
	31		Sh Below		9	
	32		Nom FRAC w/Slt Throughout			
	33		BRN: 28.0-28.1, 31.8-32.0		33.2	
	34		32.9-33.2, 34.1, 36.1-36.4			T/DEP 34.2
	35		38.2-38.4		10	DEP 35.0 Pull #5
	36					START 10:25 END 11:04
	37				36.8	TIME 39min LOSS 0.3 DRL 39min UNACC 0.3
	38				11	RMV 4.5 REC 4.2
458.5			Bottom Hole		38.7	DEP 38.8 T/DEP 38.7
	39					
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD			INSTALLATION ORH-CD			SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

10. SIZE AND TYPE OF BIT 4 7/8 1/2

2. LOCATION (Coordinates or Station) MONO M-26 STA 4+18 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) M-26/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

5. NAME OF DRILLER DAVE HARPCD

14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/18/89 COMPLETED 1/18/89

7. THICKNESS OF OVERBURDEN Ø 497.9

17. ELEVATION TOP OF HOLE 497.9

8. DEPTH DRILLED INTO ROCK 38.9

18. TOTAL CORE RECOVERY FOR BORING 38.9

9. TOTAL DEPTH OF HOLE 458.5

19. SIGNATURE OF INSPECTOR LMID

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.9	1 2 3 4		SANDSTONE LT. GR.-GR., M.N-H, M.-CG. M. BKN @ SURFACE 0.0-1.0 SH SEAM 1.6-1.9	3.9	1	PULL #1 START 9.55 END 10:05 TIME 12min DRL 12min RAN 4.6 REC 4.6 LOSS Ø UNACC Ø T/DEP 9.5
493.0	5 6 7		ICL GR. S, SLT, mottled w/R-BR below 6.2, S-VES, CL 4.0-9.6, ANG PN w/slk 4.8-5.1 7.0-7.3, mod BKN w/slk 5.6-6.2, 7.5-7.8	6.7	2	DEP 50 PULL #2 START 10:25 END 10:35 TIME 10min DRL 10min
489.2	8 9		SLS GR. S.-M.N, sa, BKN PN w/	9.7	3	RAN 5.1 REC 5.1 LOSS Ø UNACC Ø D-P 9.8 T/DEP 9.7
	10 11 12 13 14 15 16 17		SPACE 0.4, ANG PN w/slk ROOTING 8.5-8.7 F.G. SS 10.7-11.0, ANG PN w/slk 12.9-13.1, 17.1-17.5, mod BKN 13.9-14.3, 14.6-14.8, 17.5-18.0	13.5 17.1	4 5	PULL #3 START 10.49 END 11.10 TIME 21min DRL 21min RAN 9.5 REC 9.5 LOSS Ø UNACC Ø
479.4	18 19 20		SANDSTONE GR, M.H. UC. F-F., HIGH ANG FRAC TERMINATING AT EdPN. (CONT)		6 (CONT)	DEP 8.9 T/DEP 17.2 PULL #4 CONT

PROJECT GALLIPOLIS LOCK + DAM

HOLE NO. M-26/2

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 497.4				Hole No. M-26/2	
PROJECT Gallipolis Lock+Dam			INSTALLATION OPH-CD				SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
475.2	20		SANDSTONE		20.3	PULL #4	
	21		18.0-19.2, cal, cem 19.9-20.1			START 11:20 END 11:50	
			20.3-20.4 BKN sh, scam			TIME 30min DRL 30min	
	22		20.1-20.3			RHN 3.2	
			SLS		7	REC 1.4 T/DEP 22.4	
	23		GR. mH-S, Sh, BKn pns			LOSS 1.8 UNACC 1.8	
	24		0.2 spacing 3.3 L.C.			DEP 23.5	
						PULL #5	
	25		Mech Bkn 22.9-22.7 w/Lc		25.3	START 12:40 END 1:20 TIME 40min	
	26					DRL 40min	
	27					RAN 6.6 REC 3.3	
	28				8	LOSS 3.3 UNACC 3.3	
468.3	29					DEP+T/DEP 29.0	
			ICL			PULL #6 START 1:50 UNACC .8	
	30		R. BR, S-M H, SLT, Below			END 203 TIME 13min T/DEP 30.2 DRL 13min	
	31		32.0 +cL ABOVE, FRKC w/			RAN 1.2 REC .9 PULL #7 LOSS .8	
	32		SLK Throughout		32.4	START 2:20 END 2:39 TIME 9min	
	33		Mech BKn 29.1-30.5 w/Lc			DRL 19min RAN 3.4 REC 2.5	
	34		33.6-33.7 37.4-37.5, 38.2		9	LOSS .9 DEP 33.6 START 255 PULL #8 RAN 1.7 END 3:10 REC .5	
	35		38.4			TIME 15min LOSS 1.2 DRL 15min UNACC 1.2 DEP+T/DEP 35.3	
	36					PULL #9 START 3:30 END 16:00	
	37				37.5	TIME 30min DRL 30min RAN 3.6	
	38				10	REC 3.4 LOSS 0.2 UNACC 0.2	
458.5	39		BOTTOM HOLE		38.9	DEP+T/DEP 38.9	
	40						
	41						
	42						
	43						
	44						

ENG FORM 1836-A JUN 67   (ER 1110-1-1801)   GPO 1900 OF - 828 - 603   PROJECT Gallipolis Lock+Dam   HOLE NO. M-26/2

DRILLING LOG

DRILLING LOG	DIVISION OPD	INSTALLATION OR4-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

10. SIZE AND TYPE OF BIT 4x5½

2. LOCATION (Coordinates or Station) Mono M-27 STA 4+08B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. G. Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

4. HOLE NO. (As shown on drawing title and file number) M-27/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

5. NAME OF DRILLER Wayne Tice

14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/18/89 COMPLETED 1/18/89

7. THICKNESS OF OVERBURDEN Ø 497.1

17. ELEVATION TOP OF HOLE 497.1

8. DEPTH DRILLED INTO ROCK 40.0

18. TOTAL CORE RECOVERY FOR BORING 39.9

9. TOTAL DEPTH OF HOLE 457.1

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SANDSTONE			PULL #1
	1		LT.GR, H, M-CG. BKN PNS			START 11:30
	2		W/ Ø2 SPACING 0.0-2.9		1	END 11:37
						TIME 7min
	3		W/ Fe STAINING THIN EL			DRL 7min
						RAN 5.1
						REC 5.1
	4		STRINGERS 4.9-9.7		3.9	LOSS Ø
492.4						UNACC Ø
						T/DEP 9.7 DEP 5.1
	5		ICL			
			R.BR, S, MOTTLED W/GR		2	PULL #2
	6					START 12:12
			+GN-GR, OCC SLK, LT.GR			END 13:11
	7				7.3	TIME 59min
			CL 4.7-5.1, 6.6-7.0, 11.3-11.9			DRL 59min
	8					RAN 4.3
			mech BKN 5.1-5.4 w/SLK			REC 2.5
	9				3	LOSS 1.8
			7.0-9.9 w/LCI.8, core Dia			UNACC 1.8
	10					DEP+T/DEP 9.9
			LOSS 9.9-10.9, SLT 5.1-6.6			PULL #3
	11					START 13:18
						END 13:35
	12					TIME 17min
						DRL 17min
	13				12.6	RAN 4.9
						REC 4.3
						LOSS 0.1
482.9	14				4	UNACC 0.1
			CLS			DEP+T/DEP 15.8
	15		GR., S, Sh, BKN W			PULL #4
						START 13:50
	16		LC. 15.0-16.6		16.0	END 14:14
480.5						TIME 24min
	17		SANDSTONE			DRL 24min
			GR., M.H, F.G., SH SEAM		5	RAN 10.0
	18		16.0-18.1 BKN SLIGHTLY			REC 9.5
						LOSS 0.5
478.1	19					UNACC 0.5
			SLS			
	20		(CONT)		19.0	(CONT)

PROJECT Gallipolis Lock + Dam	HOLE NO. M-27/1

	ELEVATION TOP OF HOLE	
	497.1	Hole No. M-27/1

PROJECT GAllipolis Lock + DAm

INSTALLATION OPH-D

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS			Pull #4
	21		GR, S-M.H, Sh, BKN		6	
	22		PNS ~0.5 spacing			
	23		BKN 20.0-20.1			
	24				23.8	T/DrP23.8
	25					DrP 24.0
					7	Pull #5
471.1	26					STArT 14:40
	27		ICL			END 15:26
					27.3	TiME 46min
	28		R.BR, S-M.H, MottLed			DRL 46min
						RAN 7.7
	29		w/gR-gngR, occ sLK			REC 7.0
					8	LOSS .7
	30		CL AbouE 33.0 +SLT			UNACC .7
	31		below, dK gR. 27.3-29.2			
	32		sEvEREly BKN w/LC.		31.5	T/DrR 31.5
			0.7 31.3-31.5 (mech)			DrP 32.3
	33		mech BKN 31.5-31.8		9	Pull #6
	34					STArT 15:45
	35				35.3	END 16:10
						TiME 35min
	36					DRL 35min
	37				10	RAN 7.9
						REC 7.5
	38					LOSS 0.9
						UNACC 0.9
457.7	39		BottoM HOLE		39.4	T/DrP 39.9
	40					DrP 40.0
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono M-27 STA 3+76B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-27/2

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 496.4

8. DEPTH DRILLED INTO ROCK 41.6

9. TOTAL DEPTH OF HOLE 454.8

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/18/89 COMPLETED 1/18/89

17. ELEVATION TOP OF HOLE 496.4

18. TOTAL CORE RECOVERY FOR BORING 39.2

19. SIGNATURE OF INSPECTOR LMW

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.4			SANDSTONE			PULL #1
495.6			LT GR, M-C.g., BKN			START 9:06
	1		PNS w/spacing 0.2			END 9:20
			Light Fe STAIN			TIME 14min
	2		ICL		1	DRL 14min
			DR-R-BR, S-VE.S. Cl, occ			RAN 5.0
	3					REC 4.2
			SLK occ mottled w/gr			LOSS Ø
	4				3.8	UNACC Ø
			+ gn gr Cl, LT gr FATTY			T/D=9.2
	5					D=D5.0
	6		VE.S. 0.8-1.1, SEVERELY		2	PULL #2 START 4:29
			BKN w/2.8 LOSS 4.2-9.1			END 9:46
	7					TIME 17min
						DRL 17min T/D=7.3
	8					RAN .5
						REC 2.1
487.3	9		SLS		9.4	LOSS Ø UNACC Ø D=D9.5
			GR. S-m.H. S₂ BKN 9.1-9.7			PULL #3
486.3	10		HiGH ANg PN 95° 10.0 10.1			START 5:00 END 5:10
			CLS			TIME 10min DRL 10min
	11		BR., S, Sh, SEVERELY BKN		3	RAN 2.5 REC —
			10.1-10.6 LT gr VE.S. CLS			LOSS —
	12		11.6-12.1			UNACC — D=D12.0
483.7					12.9	PULL #4 START 5:50 END 5:59
	13		SLS			TIME 9min DRL 9min
			gr, m.H-S sh, BKN			RAN 2.0 REC 1.0
	14					LOSS — UNACC —
			PNS w/spacing 0.3, Cl 12.7			
	15				4	D=D18.5
			13.9, mod BKN 14.9-19.9			PULL #5
	16		ANG PN, 45° 19.7-19.9			START 6:15 END 6:27
					16.6	TIME 12min
	17					DRL 12min
			CORE DIA LOSS 15.5-16.6			RAN 3.9
	18				5	REC 5.0 UNACC 0.9
			SEVERELY BKN 17.6-18.1		18.7	LOSS 0.9 D=D18.7
	19				6 (cont)	PULL #6
			18.5-18.7			START 7:00
	20		CONT			END 7:20

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock + Dam HOLE NO. M-27/2

| ELEVATION TOP OF HOLE | 496.4 | Hole No. M-27/2 |

PROJECT GALLIPOLIS Lock + DAM
INSTALLATION ORH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		6	PULL#6
	21				21.0	TIME 20min / DRL 20min / RAN 4.8 / REC 3.2
474.4	22					LOSS —
			CLS		7	UNACC —
	23		DK GR, S, cl securely BKN 22.6-23.0, 23.5-23.7			DCP 23.5
472.7						
	24		ICL		25.2	PULL #7 / START 7:39 / END 7:56
	25		R. BR, S-M.H, sh, num. FRAC			TIME 17min / DRL 17min
	26		+ SLK, securely BKN 23.7-		8	RAN 5.1 / REC 4.8
	27		29.1, 27.2-27.9, 28.5-28.9			LOSS — / UNACC —
	28		30.9-31.2, 32.0-32.3			D-D 28.9
	29		BKN ABOVE 32.3		29.1	PULL #8 / START 8:50 / END 9:08
	30					TIME 18min / DRL 18min
	31				9	RAN 5.1 / REC 4.8
	32					LOSS 0 / UNACC 0
	33				32.8	DCP 33.5
	34					PULL #9 / START 9:30 / END 9:48
	35				10	TIME 18min / DRL 18min / RAN 3.3
	36					REC 2.8 / LOSS 0.7 / UNACC 0.7 DCP 36.8
459.1	37		Bottom Hole		32.9	PULL #10 / START 10:15 DCP 37.3
	38				11	END 10:36 / TIME 21min / DRL 21min
	39				39.2	RAN 4.8 / REC 4.6
	40					LOSS — / UNACC — DCP 40.6
	41					
	42					
	43					
	44					

DRILLING LOG

DIVISION	ORD
INSTALLATION	ORH·CD

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
MONO M-28 STA 3+66B

3. DRILLING AGENCY
W.6. JAQUES

4. HOLE NO. (As shown on drawing title and file number)
M-28/1

5. NAME OF DRILLER
Dowell Norris

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.0

8. DEPTH DRILLED INTO ROCK 39.4

9. TOTAL DEPTH OF HOLE 457.6

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE — STARTED 1/18/89 — COMPLETED 1/18/89

17. ELEVATION TOP OF HOLE 497.0

18. TOTAL CORE RECOVERY FOR BORING 39.2 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE			PULL #1
	1		LT.GR, H, M-Cg, occ Light Fe			START 4:95
			STAIN, BKN PW SW 0.9		1	END 5:00
	2		SPACING - CKN 0.0-0.6			TIME 15.min
						DRL 15min
494.1	3					RAN 3.7
			CLS			REC 4.8
	4		GR. S. Sh BKN 3.4-3.6		3.8	LOSS 0.2 T/DCP3.5
	5					UNACC 0.2
						DCP 5.0
490.9	6				2	PULL #2
			SANDSTONE			START 5:05
	7		GR., M.H., F-VE.Fg. SLT			END 5:35
			SLS, GR, M.H. SQ 6.1-6.5		7.4	TIME 30min
	8		ANG PW 45° 7.4-7.7			DRL 30min
488.5						RAN 10.9
	9		SLS			REC 9.9
			GR, S-M.H, SHA		3	LOSS 0
	10					UNACC 0
			SQ 8.5-9.3, BKN, 13.4-			
	11				11.2	
			13.6, 15.3-15.3, CLS			
	12					
			SCRM 15.0-16.3			
	13				4	
	14					
					14.6	
	15					DCP 15.0 T/DCP 14.8
						PULL #3
	16				5	START 5:45
480.9						END 6:05
	17		SANDSTONE		17.2	TIME 20min
479.2			GR, M.H, F-VE.Fg 16.6-108			DRL 20min
	18		SLS		6	RAN 10.0
			GR, S-M.H. Sh		(CONT)	REC 10.1
	15					LOSS 0
						UNACC 0
	20		CONT			(CONT)

PROJECT Gallipolis Lock + Dam

HOLE NO. M-28/1

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE 497.0			Hole No. M-28/1	

PROJECT Gallipolis Lock + Dam **INSTALLATION** OPH - CD **SHEET 2 OF 2 SHEETS**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		6	P4//#3
	21		GR S-m.H SA		2.0	
	22					
	23				7	
	24					
	25				25.1	DCP 24.8 / DCP 25.1
	26					P4//#4
470.2	27		ICL	8		START 6:25
	28		R. BR, S-W.H Sh, Occ			END 6:55
	29		MOTTLED W/GR, -GN.GR	29.1		TIME 30 min
	30		Num FENC W/SLK ABOVE			DRL 30 min / FEN 10.0
	31		32.0, CLAYEY 28.7-32.0		9	REC 8.9
	32		GR + MOTTLED W/R-GR			LOSS 1.1
	33		REESE 27.7, B'KN Severely	32.8		UNREC 1.1
	34		28.4 -28.7, 30.1-30.9, 34.5			
	35		-35.0		10	DCP 34.8 / T/DCP 35.0
	36					P4//#5 / START 7:15
	37			37.4		END 7:35 / TIME 20 min
	38				11	DRL 20 min / FEN 4.6
457.2	39		BOTTOM HOLE	39.2		REC 3.8 / LOSS 0.9 UNREC 0.9
	40					DCP 39.9 T/DCP 39.2
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67 (ER 1110-1-1801) GPO 1990 OF - 628 - 603

PROJECT Gallipolis Lock + Dam **HOLE NO.** M-28/1

DRILLING LOG

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO M-28 STA 3+40 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-28/2

5. NAME OF DRILLER DAVE HARPER

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 496.7

8. DEPTH DRILLED INTO ROCK 38.2

9. TOTAL DEPTH OF HOLE 458.5

10. SIZE AND TYPE OF BIT 4 V 5⅝"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/19/89 COMPLETED 1/19/89

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDy CLy		Box	Pull #1
495.8	1		gr., soft		1	START 7:55
			SANDSTONE			END 8:08
	2		m.-c.g., m.h., m.gr.; LEA			TIME 13 min
494.2			H.gr. 1.4-2.5			DRL 13 min
	3		ICL			RAN —
			R.br. mottled /s.-m.h.			REC 4.9
	4		SLK 0.2 FAT g RCL. 2.5-		3.8	LOSS 0
			2.7 VE.S. 4.9-5.7 bkn			UNACC 0
	5		VE S 6.6-7.3; bkn 7.3-		Box	DEP+TIDEP 5.0
			9.1		2	Pull #2
	6					START 8:18
	7					END 8:35
						TIME 17 min
					7.5	DRL 17 min
	8				Box	RAN —
488.0					3	REC 5.0
	9		SANDSTONE			LOSS 0
			s.ly, Fig., m.h., m.g. wthr			UNACC 0
	10		gr sls LAM.; VE bkn.			DEP 10.0 TIDEP 9.9
			8.0-10.1 Lmed grading		10.7	Pull #3
	11		more s.ly w/depth		Box	START 9:07
484.7					4	END 9:37
	12		CLS/ICL			TIME 30 min
	13					DRL 30 min
			S.-m.h., m.-dk.gr			RAN —
	14		SLK VE.S 12.5-15.1			REC 5.3
			w 10.3 LC.			LOSS 0.3
					14.5	UNACC 0.3
481.6	15				Box	
			SLS/SS		5	TIDEP 15.5
	16		Interbd, SLS parts			DEP 16.3
			shy; Closely spaced,			Pull #4
	17		s.ly. DTgs. 15.5-17.8			START 10:53 LOSS 0
			Lmax 0.5) VE.Sa.			END 11:22 UNACC 0
	18		17.8-20.5 grading		18.2	TIME 29 min
					Box	DRL 29 min
	19				6	RAN —
	20		(Cont)		(Cont)	REC 4.7

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Lock & Dam   **HOLE NO.** M-28/2

PROJECT							SHEET 2
Gallipolis Lock & Dam			INSTALLATION ORH-CD				OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
476.2	20		SLS/SS		Box 6	T/DEP 20.2 DEP 20.5
	21		CLS		21.3	PULL #5
	22		occ silty; shy., m-DK gr s-m.h. closely-med spaced shy prgs slk		Box 7	START 12:00 END 12:35 TIME 35 min
	23		Pty @ 23.6 grading			DRL 35 min
			Into IcL			RAN —
	24					REC 9.8
						LOSS Ø
	25				25.1	UNACC Ø
	26				Box 8	
470.2						
	27		ICL			
			S.-m.h., gr. P, bR, slk			
	28					
			GRAyish TRANS. FRom			
	29				28.9	
			CLS TO ICL 26.5-28.0			
	30				Box 9	DEP 30.1 T/DEP 30.0
			VE to med bKN to BIH			PULL #6
	31					START 12:46
						END 1:10 UNACC Ø
	32				32.2	TIME 29 min
						dRL 24 min
	33				Box 10	RAN —
						REC 4.8
	34					LOSS Ø
	35					DEP 34.9 T/DEP 34.8
					35.8	PULL #7
	36					START 1:50
					Box 11	END 2:06
	37					TIME 16 min
						DRL 16 min
						RAN —
						REC 3.4
458.5	38		Bottom Hole.		38.2	LOSS Ø T/DEP 38.2
	39					UNACC Ø DEP 38.9
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A   JUN 67   GPO: 1969 OF—329-242

PROJECT	HOLE NO.
Gallipolis Lock/Dam	M-28/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET / OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO M-29

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-29/1

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0   496.9

8. DEPTH DRILLED INTO ROCK 38.2

9. TOTAL DEPTH OF HOLE 458.7

10. SIZE AND TYPE OF BIT 4 x 5½ "

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER NH

16. DATE HOLE | STARTED 1-18-89 | COMPLETED 1-19-89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 38.2 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9	1		SANDSTONE		Box 1	Pull #1
	2		m.c.g., m.h. m.gr. bkn., STA (may piece 0.2) 0.0-0.7			START 8:40 / END 8:45 / TIME 5 min / DRL 5 min / RAN 5.0
	3					REC 5.3
	4				3.7	LOSS — / UNACC —
491.5	5				Box 2	DEP-5.0 T/DEP 4.0
	6		ICL			Pull #2
	7		R. br. GREENISH GR S. - m.h. SLK, bkn		7.4	START 9:15 / END 9:35 / TIME 20 min
	8				Box 3	DRL 20 min / RAN 7.9
	9		GRADING into			REC 10.0
487.5						LOSS — / UNACC —
	10		CLS Sky, s.-m.h., m.gr. PB			
485.7	11		H.dens, L. ha, SLK pins 10.0-11.2		10.8	
	12		SANDSTONE		Box 4	
	13		Sky, flg., m.h., m.gr. Interbdd w/SLS, s.-			T/DEP 12.9
	14		m.h., m-dk.gr ha (80), 0, PTs shy,			
	15		0, Irr; T 11.7-11.7;		14.6	DEP 15.3
	16		ha, 0, JT. w/SLK.11.8 -12.1 ICL. 20. 13.6-		Box 5	
	17		14.1; s.13.6-13.7, bkn, SLK 13.7-14.1			Pull #3
	18		SLS 14.1-17.3: CLS 17.3 -17.6 ha.-ver, Irr,		18.3	START 9:45 / END 10:05 / TIME 20 min
	19		0, JT. 16.7-17.5 ss w/SLS/CLS incl. & stgs STARTING @ 17.6' Sky CLS		Box 6	DRL 20 min / RAN 11.0
	20		(CONT)		(cont)	(CONT)

PROJECT GALLIPOLIS Lock & DAM				**ELEVATION TOP OF HOLE** 496.9		**Hole No.** M-29/1
			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.4	20				Box 6	Pull #3
	21		CLS			
	22		m.-dk.gr, s.-m.h. ptg		21.8	REC 9.8
			sly core spm-e			LOSS —
	23		20.5, closely		Box 7	UNACC —
472.2	24		spaced hor ptgs			
	25		ICL		25.4	DEP 24.8
						T/DEP 25.1
	26		Greenish gr.-r.br.,			Pull #4
	27		s.-m.h, bkn w/		Box 8	START 22:25
	28		slk. 26.3-38.2			END 22:50
						TIME 25min
						DRL 25min
	29				29.2	RAN 10.8
						REC 10.8
	30					LOSS 0
	31				Box 9	UNACC 0
	32					
	33				33.1	
	34				Box 10	
	35					
	36					DEP/T/DEP 35.9
					36.5	Pull #5
	37				Box 11	START 7:45
	38		Bottom Hole		38.2	END 8:10
						TIME 25min
	39					T/DEP 38.2
						DRL 25min
	40					RAN —
	41					REC 2.3
						LOSS 0
	42					UNACC 0
	43					DEP 42.7
	44					

ENG FORM 1836-A
JUN 67

GPO: 1969 OF—329-243

| PROJECT GALLIPOLIS Lock & DAM | HOLE NO. M-29/1 |

DRILLING LOG		**DIVISION** ORD		**INSTALLATION** ORH-CD		**SHEET 1 OF 2 SHEETS**

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO M-29 STA 2+89B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-29/2

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.7

8. DEPTH DRILLED INTO ROCK 37.8

9. TOTAL DEPTH OF HOLE 458.9

10. SIZE AND TYPE OF BIT 4 x 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/19/89 COMPLETED 1/19/89

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING 37.8

19. SIGNATURE OF INSPECTOR LMO

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE			PULL #1
	1		M.-C.G., m.h., m.gr BKN			START 2:52
			(mech) into sm-m.			END 3:04
	2		pieces		Box 1	TIME 12min
						DRL 12min
	3					RAN —
						REC 4.8
492.5	4				3.8	LOSS Ø
			ICL			UNACC Ø T/DEP 4.5
	5				Box 2	DEP 5.1
			S.-m.h., greenish.gr.,			PULL #2
	6					START 3:12
			SLK VE.S. 4.2-4.7: bKN			END 3:23
	7					TIME 11min
			into sm, slk pieces		7.5	DRL 11min
	8					RAN —
			4.7-6.0 m.spaced, slk		Box 3	REC 4.2
	9					LOSS Ø
			PT9s 6.0-9.5 VE.bKN			UNACC Ø DEP 9.7
	10					T/DEP 9.8
			9.5-11.1			PULL #3
485.6	11				11.2	START 4:36
			SANDSTONE			END 4:47
484.7	12		SLY, m.g., m.h.,			TIME 11min UNACC Ø
			m.gr Ø-45° JTs @		Box 4	DRL 11min
	13		10.3 + 11.0			RAN 5.5
			ICL/SLS			REC 5.6
	14					LOSS Ø
			S:m.h, m-dK.gr. SLK.			DEP+T/DEP 14.7
	15		VE bKN 12.0-16.0 w/		15.6	PULL #4
			occ. VE.S.gr.cL. 18.1-			START 5:00
	16		18.7		Box 5	END 5:20
						TIME 20min
	17					DRL 20min
						RAN 5.2
	18					REC 6.1
477.9					15.6	LOSS Ø
	19		SS/SLS		Box 6	UNACC Ø
			Interbdd, ss fig.pts.shy			DEP+T/DEP 19.6
	20		(cont)		(cont)	

PROJECT Gallipolis Lock + Dam   INSTALLATION ORH-CD   SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SS/SLS CBONT		Box 6	Pull #5
	21		MosTly SLs			START 5:32
475.0						END 6:06
	22					TIME 34 min
			CLS			DRL 34 min
	23		SLy, S:-m.h., m. dk		23.2	RAN 4.6 T/DEP 23.1
			gR.,pTs shy. 1/2 VE.S.			REC 4.8
	24		gR cL @ 21.7 CLoseLy		Box 7	LOSS —
			m-spaced, ptgs			UNACC — DEP 29.4
	25					Pull #6
			gRADing			START 6:15
	26					END 6:31
470.2						TIME 16 min
						DRL 16 min
	27		ICL		26.7	RAN 4.6
						REC 5.2
	28		GREENish gR.-R.bR, s.-		Box 8	LOSS 0
						UNACC 0 T/DEP 27.5
	29		m.h., SLK VE bKn 28.5			DEP 28.0
						Pull #7
	30		-32.0 BECOMming R.bR			START 6:42
					30.4	END 6:56
	31		@ 32.0 LEFT in hoLE			TIME 14 min
					Box 9	DRL 14 min
	32		37.8 - 39.5.			RAN 6.3
						REC 5.4
	33					LOSS 0
						UNACC 0
	34					DEP+T/DEP 32.6
					39.3	Pull #8
	35					START 7:05
					Box 10	END 7:32
	36					TIME 27 min
						DRL 27 min
	37					RAN 3.2
458.9			Bottom HoLE		37.8	REC 4.5
	38					LOSS —
	39					UNACC —
	40					DEP 37.8
	41					
	42					T/DEP 39.5
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET / OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO M-30 STA 2+74 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-3011

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.5

8. DEPTH DRILLED INTO ROCK 37.8

9. TOTAL DEPTH OF HOLE 458.7

10. SIZE AND TYPE OF BIT 4 15½"

11. DATUM FOR ELEVATION SHOWN (TSM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | STARTED 1/19/89 | COMPLETED 1/19/89

17. ELEVATION TOP OF HOLE 496.5

18. TOTAL CORE RECOVERY FOR BORING 37.8

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5	1 2		SANDSTONE m.-c.g., m.h., m.gr. BKN - 0.0. -0.8		Box 1	Pull #1 START 8:50 END 9:00 TIME 10 min DRL 10 min RAN — REC 4.5
493.4	3 4 5 6		CLS/ICL s: m.h., m-dk.gr ve.s. 0.0 cl. 3.1-3.3; s 3.3-3.9: bkn. w/slk SURFACES 3.9-7.3 (max piece 0.2)	3.9	Box 2	LOSS Ø UNACC Ø T/DEP 4.5 DEP 5.1 Pull #2 START 9:13 END 9:21 TIME 8 min
489.2	7 8 9		SANDSTONE sly, P.g., m.h. m.gr w/dk gr. sly 20st Lam: 0. hA JT. 7.5-9.0 grading	7.7	Box 3	DRL 8 min RAN — REC 5.2 LOSS Ø UNACC Ø DEP 9.7 T/DEP 9.8
486.8	10 11 12 13 14		CLS/SLS m.-dk.gr, s.-m.h, Prs.sly w/closely spaced slk, hor-near ptgs w/striations becoming softer, more clayier @20: ue bkn slk 12.6-13.8 grading into	11.1	Box 4	Pull #3 START 9:28 END 9:36 TIME 8 min DRL 8 min unacc Ø RAN — REC 5.0 LOSS Ø
481.8	15 16		SLS clyy.-m.dk.gr, s-mh.	14.7	Box 5	DEP & T/DEP 14.7 Pull #4 START 9:44 END 9:54 TIME 10 min DRL 10 min RAN — REC 4.9
479.5	17 18 19 20		SANDSTONE sly. Pig., m.h, m.gr grading To (CONT)	18.5 (CONT)	Box 6	Loss Ø UNACC Ø DEP & T/DEP 14.6 Pull #5 (CONT)

PROJECT Gallipolis Lock & Dam	HOLE NO. M-3011

ELEVATION TOP OF HOLE	**496.5**	Hole No. *M-301*

PROJECT		INSTALLATION	SHEET *Z*
GALLIPOLIS Lock DAM		*ORH-CD*	OF *Z* SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		*CLS/SLS*		Box 6	*PULL #5*
	21					*START 10:02*
	22		*Interbdd S-mh M. tltgr*		22.0	*END 10:19* / *TIME 17min*
	23		*w/occ hor s by ptg. CLS*		Box 7	*DRL 17min* / *RAN —*
	24		*Increasing w/depth*			*REC 3.6 T/DEP 23.1*
	25		*grading into*			*LOSS 0* / *UNACC 0 DEP 24.4*
						PULL #6
	26				25.5	*START 10:28* / *END 10:43*
	27				Box 8	*TIME 15min* / *DRL 15min UNACC 0*
469.0						*RAN 0*
	28		*JCL*			*REC 4.3 T/DEP 27.5*
						LOSS 0 DEP 28.0
	29		*GREENISH gr.-R. br,*		29.2	*PULL #7* / *START 10:50*
	30		*S- m.h., w/occ.*		Box 9	*END 11:40* / *TIME 50min*
	31		*SLK PTG.*			*DRL 50min UNACC 0* / *RAN —*
	32					*REC 5.1* / *LOSS 0*
	33				32.6	*DEP & T/DEP 32.6*
	34				Box 10	*PULL #8* / *START 12:34*
	35					*END 12:55* / *TIME 21min*
	36				36.0	*DRL 21min* / *RAN —* / *REC 5.2*
	37				Box 11	*LOSS 0* / *UNACC 0*
458.7	38		*Bottom Hole*		37.8	*DEP & T/DEP 37.8*
	39					
	40					
	41					
	42					
	43					
	44					

PROJECT	HOLE NO.
GALLIPOLIS Lock DAM	*M-301*

DRILLING LOG

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO M-30 2+40 R

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-30/2

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 496.9

8. DEPTH DRILLED INTO ROCK 39.5

9. TOTAL DEPTH OF HOLE 457.4

10. SIZE AND TYPE OF BIT 4 ½ 5 ½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/19/89 COMPLETED 1/19/89

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING 39.5 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7	1 2 3		SANDSTONE m-c.g, m.h., m.gr bkn int sm. pieces (max 0.3) core spins @ 2.4 & 2.9 w/0.4 L.C		Box 1	Pull #1 START 8:30 END 8:45 TIME 15 min DRL 15 min RAN 5.0 REC 4.4
493.3				3.7		LOSS Ø UNACC Ø
492.1	4		CLS s. m. h., m.gr. 0.@ 3.4 (prob area of 0.2 L.C.)			
	5 6 7		SANDSTONE fig. m.h., m.gr BKN. 5.0-6.5 w/CLS lam grading into		Box 2.	DEP + T/DEP 5.0 Pull #2 START 8:55 END 9:12 TIME 17 min DRL 12 min UNACC Ø
487.2				7.7		RAN 4.1
	8 9 10 11		CLS/SLS Interbdd, shy, s m.h. -m. dk.gr w/ closely spaced slk ptgs		Box 3	REC 4.5 LOSS Ø DEP 9.1 T/DEP 9.4 Pull #3. START 9:27 END 9:45
485.3				11.4		TIME 18 min DRL 18 min
	12 13 14		CLS s. m.h., m.dkgr. w/occ sa lam ve bkn. 11.4- 12.9 occ sa. Increasing sa w/depth 0.1 L.C btwn 19.1 & 17.6		Box 4	RAN 5.2 REC 4.6 LOSS Ø UNACC Ø T/DEP 14.1 DEP 14.3
	15 16 17			14.8	Box 5	Pull #4 START 9:56 END 10:08 TIME 12 min DRL 12 min RAN 4.8 REC 5.3
479.1	18 19		SANDSTONE shy. fig. m.h., m.gr BKN 19.1-19.4			LOSS 0.1
				19.6	Box 6	UNACC 0.1 DEP 19.1
477.3	20		CLS (CONT)	(CONT)		T/DEP 19.5 Pull #5

ELEVATION TOP OF HOLE						Hole No.	M-301/2

PROJECT: Gallipolis Lock & Dam
INSTALLATION: ORH-CD
ELEVATION TOP OF HOLE: 496.7
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	Pull #5
	21					START 10:15
	22		occ shy s.-m.h., m		22.1	END 10:35
			dk. gr shy bkn A.9			TIME 20min LOSS 0.2
	23		-21.8 w/0.2 L.C. (mech)		Box 7	DRL 20min UNACC 0.2
			: 0.2 s gr. cl. 26.9-27.1			RAN 4.9
	24					REC 4.5
						DEP 29.0
	25				25.5	T/DEP 29.2
						Pull #6
	26				Box 8	START 10:49
						END 10:58
469.6	27					TIME 9min
	28		ICL			DRL 9min
						RAN 5.4
	29		motted to R. br		29.0	REC 5.2
						LOSS 0
	30		S.- m.h., SLK		Box 9	UNACC 0
						DEP/TDEP 29.4
	31		S 27.1 to 29.4.			Pull #7
	32				32.6	START 11:10
						END 11:25
	33				Box 10	TIME 15min
						DRL 15min UNACC 0
	34					RAN 4.1
						REC 3.9
	35					LOSS 0 T/DEP 33.3
						DEP 33.5
	36				36.1	Pull #8
	37					START 23:40
					Box 11	END 23.57
	38					TIME 17min
						DRL 17min
	39					RAN 6.2
457.2			Bottom Hole		39.5	REC 5.1
	40					LOSS 1.1
	41					UNACC 1.1
	42					T/DEP 39.5
	43					DEP 39.5
	44					

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO M-31 STA 2+30B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-31/1

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.5

8. DEPTH DRILLED INTO ROCK 39.0

9. TOTAL DEPTH OF HOLE 457.5

10. SIZE AND TYPE OF BIT 4 75½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57-MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED n/a | UNDISTURBED n/a

14. TOTAL NUMBER CORE BOXES 12

15. ELEVATION GROUND WATER n/a

16. DATE HOLE STARTED 1/19/89 COMPLETED 1/19/89

17. ELEVATION TOP OF HOLE 496.5

18. TOTAL CORE RECOVERY FOR BORING 39.0

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5			SANDSTONE			Pull #1
	1		l.gr, m.g th.bdd to		Box 1	START 13:25
	2		Flaggy			END 13:33
						TIME 8 min
	3					DRL 8 min
						RAN —
492.6	4				3.6	REC 4.7
			CLS			LOSS 0.3
	5		m.h. gr w/0.1 S, to @			UNACC 0.3
			3.9, 0.3 LOSS 0-5.0		Box 2	DEP 3.1 T/D 275.0
	6		bkn CORE 5 S TO 7.5 w/			Pull #2
			OCC SLK.			START 13:43
	7		Becoming mass & sl @			END 13:52
			7.6 w/ cl/sls inter		7.0	TIME 9 min
	8		bdd & occ sl pn's			DRL 9 min
			LOSS sl below 10.5			RAN —
	9		w/ occ SLK AND		Box 3	REC 5.0
			mORESH w/ depth			LOSS Ø
	10		16.0-16.3 bkn CRumbly			UNACC Ø T/DEP 9.6
					10.5	DEP 10.2
	11					Pull #3
						START 14:05
	12					END 18:12
					Box 4	TIME 1 hr 7 min
	13					DRL 11 min
						RAN —
	14					REC 4.6
						LOSS Ø
	15				14.2	UNACC Ø
						DEP + T/DEP 14.6
						Pull #4
480.3	16				Box 5	START 15:21
						END 15:33
	17		SANDSTONE			TIME 12 min
			m.h. gr hg. mass			DRL 12 min
	18		grading		17.7	RAN —
						REC —
	19				Box 6	LOSS —
						UNACC — T/DEP 18.8
	20		CLS			DEP 19.6
			(CONT)		CONT	

| PROJECT Gallipolis Lock & Dam | INSTALLATION ORH-CD | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		GLS		Box 6	PULL#5 T/DEP 20.3
	21		S, m.h. g R 0.3 w/SLK		20.9	START 4:20 DEP 20.7
			0.1 LOSS 18.8 - 20.3			END 4:40 PULL#6
	22		Interbdd ICL below		Box 7	TIME 20min START 4:45
			21.5 SLK 22.9 MASS			DRL 20min END 4:55
	23		SH, SK 22.9 - 25.8			RAN — TIME 10min
			GRADIATIONAL CONTACT			REC 1.4 DRL 10min
	24					LOSS 0.1 RAN 4.2
						UNACC 0.1 REC 5.1
	25				20.7	UNACC — LOSS —
4701	26				Box 8	DEP 5.0
			ICL			PULL#7 T/DEP 25.4
	27		m.h. gr. - R, SLK, solid			START 5:10
	28		w/SH PARTINGS. 0.9 LC		28.5	END 5:35 TIME 25min DRL 25min RAN 5.1 REC 4.8
	29		30.2 - 39.0			LOSS 0.3 UNACC 0.3
	30				Box 9	DEP 30.0 T/DEP 30.2
	31					PULL#8
	32				32.1	START 5:50 END 6:30
	33				Box 10	TIME 40min DRL 40min RAN 9.7
	34					REC 8.4
	35					LOSS .13 UNACC .13
	36				36.0 Box 11.	
	37				37.3	
	38				Box 12	
4575	39		Bottom Hole		39.0	T/DEP 39.0
	40					DEP 39.7
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD		

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO M-31 STA 1+85B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-31/2

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 496.6

8. DEPTH DRILLED INTO ROCK 38.6

9. TOTAL DEPTH OF HOLE 458.0

10. SIZE AND TYPE OF BIT 4 x 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/19/89 COMPLETED 1/19/89

17. ELEVATION TOP OF HOLE 496.6

18. TOTAL CORE RECOVERY FOR BORING 38.6 %

19. SIGNATURE OF INSPECTOR TMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6			SANDSTONE		Box 1	Pull #1
	1		M.-C.G., M.h, M.gr.			START 7:35
						END 7:45
	2					TIME 10 min
			BKN. 0.0-2.5			DRL 10 min
	3					RAN 4.9
					3.6	REC 5.1
	4					LOSS 0
					Box 2	UNACC 0
491.3	5					DEP 4.9 T/DEP 5.1
	6		CLS S.-m.h, m. dk.gr w/			Pull #2
	7		med spaced ang.slk. pt.		7.3	START 7:50 END 8:20
	8		SLS.LAM. 8.1-8.3		Box 3	TIME 30 min DRL 30 min
488.1						RAN 9.4
	9		SANDSTONE slky fig, m.h., m.gr.			REC 9.3
	10		bkn along na.vcr frac			LOSS 0 UNACC 0
	11		8.5-10.4. grading		11.1	
484.6	12				Box 4	
	13		CLS S.-m.h., m.-dk.gr VE.S., BKN 12.6-15.2			
	14		0.8 LC btwn 14.4-15.2 Becoming slky w/slk		14.5	DEP 14.3 T/DEP 14.4
481.2	15		PTgs @ 15.2		Box 5	Pull #3
	16		SANDSTONE			START 9:15
	17		slky, fig, m.h, m.- dk.gr med. spaced		17.6	END 9:55 TIME 40 min
	18		PTgs		Box 6	DRL 40 min RAN 10.5
	19					REC 7.9 LOSS 0.8
477.0	20		CLS		(cont)	UNACC 0.8 (CONT)

DRILLING LOG (Cont Sheet) ELEVATION TOP OF HOLE **496.6** Hole No. **M-3/2**

PROJECT **Gallipolis Lock + Dam**   INSTALLATION **ORH-CD**   SHEET **2** OF **2** SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20				Box 6	Pull #3
	21		CLS		21.2	
	22		Sly., s-mh, m-dt.gr		Box 7	
	23		occ. Sly.: SA @ 25.0			
	24					T/DEP 23.3
471.2	25				25.4	DEP 24.8
	26		ICL			Pull #4
	27		Greenish gr-r-br.		Box 8	START 10:20 END 10:50 TIME 30 min
	28		s.m.h SLK			DRL 30 min RAN 8.4 REC 8.0
	29		0.13.gr cl @ 25.4		29.1	Loss 2.1 UNACC 2.1
	30		very BKN 26.8 - 33.4 w/ 2I. L.C.			
	31				Box 9	
	32					
	33					DEP 33.4 T/DEP 33.2
	34					Pull #5 START 14:45
	35				35.7	END 15:10 TIME 25 min
	36				Box 10	DRL 25 min UNACC RAN ⊖
	37					REC 3.4 Loss ⊖
	38					DRL 38.0
458.0	38		Bottom Hole		38.6	
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67   GPO 1963 OF—329-248   PROJECT **Gallipolis Lock & Dam**   HOLE NO. **M-3/2**

Hole No. M-32/1

DRILLING LOG	DIVISION OLD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4 V5½
2. LOCATION (Coordinates or Station) MONO M-32 STA 475 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W.G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) M-32/1	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE	14. TOTAL NUMBER CORE BOXES 11
	15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑VERTICAL ☐INCLINED _____ DEG. FROM VERT.	16. DATE HOLE	STARTED 1/20/89	COMPLETED 1/20/89

7. THICKNESS OF OVERBURDEN 0 496.7	17. ELEVATION TOP OF HOLE 496.7
8. DEPTH DRILLED INTO ROCK 39.5	18. TOTAL CORE RECOVERY FOR BORING 39.5 %
9. TOTAL DEPTH OF HOLE 457.2	19. SIGNATURE OF INSPECTOR _JMD_

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE			Pull #1
	1		m.h., gr, m.g. Thin bd		Box 1	START 8:25
						END 8:33
	2		To mass			TIME 8 min
						DRL 8 min
	3					RAN —
						REC 5.0
	4				38	LOSS 0
492.1						UNACC 0
	5		CLS		Box 2	DEP 5.0 T/D:P5.0
			m.h., gr w/occ slk			Pull #2
	6					START 8:45
			o.l. RED ICL @ 4.6			END 8:58
	7				7.5	TIME 13 min
			o.l Loss 5.0-9.7, 0.2 hA			DRL 13 min
	8					RAN —
			IRR clear FRAC @ 7.5			REC 9.6
	9				Box 3	LOSS 0.1 UNACC 0.1
487.2						DEP+T/DEP 9.7
	10		SLS			Pull #3
			m.h. gr hN to vert		11.0	START 9:08
	11		CLEAR Tight FRAC 9.7 to 11.3			END 9:26
						TIME 18 min
484.6	12					DRL 18 min
			CLS		Box 4	RAN —
	13		m.h. gr w/o.l SOFT 2a 11.5, 0.1 bkn 2o 13.2, 0.3 bkn @ 19.2			REC 5.0
						LOSS 0
	14					UNACC 0
482.1					13.7	DEP 13.7
	15		sh, cls sl/sls			T/DEP 15.0
			mh, gr MASS w/rs 2o.			Pull #4
	16		1.2 F3 ss @ 16.3, 0.6		Box 5	START 9:41
			Loss 19.7-19.7 0.2			END 9:50
	17		BK3 s.20 22.5 To 25.2			TIME 9 min
						DRL 9 min
	18					RAN —
					18.5	REC 4.9
	19				Box 6	LOSS 0.6
						UNACC 0.6
	20		(cont)		(cont)	T/DEP 19.5

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock + Dam	HOLE NO. M-32/1

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PROJECT Gallipolis Lock & Dam			INSTALLATION ORH-CD		SHEET 2 OF 7 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g

ELEVATION	DEPTH	LEGEND	CLASSIFICATION	% CORE RECOV	BOX/SAMPLE	REMARKS
	20		sh, cl, sh/sls		Box 6	Pull #5
	21					START 10:06
	22					END 10:15
						TimE 9 min
	23				22.5	DRL 9 min
						RAN —
	24				Box 7	REC 5.0
						Loss 0
471.9	25					UNACC 0 T/DEP293
						DEP29.7
	26		Icl		25.9	Pull #6
			mh, gr, slk, solid			START 10:25
	27				Box 8	END 10:45
			0.2 SOFT to 2.0@			TimE 20 min
	28					DRL 20 min
			29.8 Top RUN, 0.5 Loss			RAN —
	29					REC 5.1
			29.8 - 39.8, 0.2 SOFT			Loss 0
	30				29.6	UNACC 0
			Zon bkn 40.1 0.8 Loss			DEP 29.6
	31				Box 9	T/DEP 29.8
			39.8 - 39.5			Pull #7
	32					START 11:00
						END 11:45
	33				33.2	TimE 45 min
						DRL 45 min
	34				Box 10	RAN —
						REC 4.5
	35					Loss 0.5
						UNACC 0.5
	36					DEP 34.7
					36.7	T/DEP 39.8
	37					Pull #8
						START 13:00
	38				Box 11	END 13:39
						TimE 39
	39					DRL 39
457.2			Bottom Hole		39.5	RAN —
	40					REC 4.2
						Loss 0.5
	41					UNACC 0.5
						T/DEP 39.5
	42					DEP 39.7
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)	GPO 1980 OF - 628 - 803	PROJECT Gallipolis Lock & Dam	HOLE NO. m-32/1

DRILLING LOG	DIVISION ORH		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono M-32 STA 1+40B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-32/2

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE
[X] VERTICAL [ ] INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.7

8. DEPTH DRILLED INTO ROCK 38.0

9. TOTAL DEPTH OF HOLE 458.7

10. SIZE AND TYPE OF BIT 4" / 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/25/89 COMPLETED 1/25/89

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING 38.0

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
496.7			SANDSTONE			PULL #1
	1		m.-c.g., m.h., m.gr.		Box 1	START 12:25 / END 12:40
	2					TIME 15min / DRL 15min
	3					RAN — / REC 4.9
492.5	4				3.8	LOSS Ø / UNACC Ø
			CLS			DEP 4.5 / DEP 4.9
	5		S.-m.h., m.-dk.gr		Box 2	PULL #2 / START 12:50
	6		0.2 3.gr. cl. @ 4.2-4.4 / m.-spaced slk ptgs			END 1:00 / TIME 10min
	7		ve bkn. w/sls len & / slk. ptgs 8.0-10.2		2.1	DRL 10min / RAN —
	8					REC 4.5 / LOSS Ø
	9				Box 3	UNACC Ø
486.5	10					T/DEP 9.4 / DEP 9.9
	11		SLS. / S.-m.h, m.-dk.gr		10.8	PULL #3 / START 1:05 / END 1:15
484.8						TIME 10min / DRL 10min
	12		CLS		Box 4	RAN —
	13		m.-dk.gr., s.-m.h., shy / occ shy			REC 4.9 / LOSS Ø
	14		shy -14.3-15.6 w/hor, / gr.cl. coa., hor. ptg @ 15.0		14.0	UNACC Ø / T/DEP 14.3
	15				Box 5	DEP 14.7 / PULL #4 / START 1:18
481.1			SANDSTONE			END 1:30
480.1	16		shy, f.g, m.h., m.gr. / vert. irr, o.jt 15.6-16.6			TIME 12min / DRL 12min
	17		SLS / S.-m.h., m.-dk.gr, pts		12.3	RAN —
	18		shy sa zo. 19.6-20.6		Box 6	REC 4.9 / LOSS Ø
	19					UNACC Ø / T/DEP 19.0
	20		(CONT)		(CONT)	DEP 19.9

ELEVATION TOP OF HOLE					496.7			Hole No. M-32/2

PROJECT: Gallipolis Lock & Dam

INSTALLATION: ORH-CD

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.1	20		SLS		Box 6	PULL #5
	21		CLS		20.0	START 1:35
	22		S. m.h., m-dk.gR: occ		Box 7	END 1:50
			sLy : SLy 20 w/sLK.pTg			TIME 15min
	23		@ 20.7 : 0.1 S.gR cL@			DRL 15min
			23.3 - 23.4			RAN —
	24		TRAN 23.4 - 27.2 w/m-			REC 5.2
			SPACEd sLK pAgs: s.20			LOSS Ø
	25				24.4	UNACC Ø DEP 24.3
						T/DEP 24.4
	26				Box 8	PULL #6
						START 1:55
469.5	27					END 2:10
	28		ICL		28.2	TIME 15min
			R. bR, s.-m.h., bKn.w/			DRL 15min
	29				Box 9	RAN —
			SLK-pLns ThroughouT			REC 5.3
	30					LOSS Ø
	31					UNACC Ø
					31.4	T/DEP 29.5
	32				Box 10	DEP 29.7
	33					PULL #7
						START 2:15
	34				34.6	END 2:40
	35					TIME 15min
	36				Box 11	DRL 15min
	37					RAN —
458.7	38		Bottom Hole		38.0	REC 4.9
	39					LOSS Ø
	40					UNACC Ø
	41					T/DEP 34.6
	42					DEP 34.9
	43					PULL #8
	44					START 2:45
						END 3:10
						TIME 25min
						DRL 25min
						RAN —
						REC 4.7
						LOSS Ø
						UNACC Ø T/DEP 39.3
						DEP 39.8

ENG FORM 1836-A
AN 67   (ER 1110-1-1801)   GPO 1980 OF - 628-603

PROJECT: Gallipolis Lock & Dam   HOLE NO. M-32/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono M-33 STA 1+30A

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-33/1

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.9

8. DEPTH DRILLED INTO ROCK 38.5

9. TOTAL DEPTH OF HOLE 458.4

10. SIZE AND TYPE OF BIT 4×5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/25/89 COMPLETED 1/25/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 38.5

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9						PULL #1
	1		SANDSTONE m.c.g., m.h., m.gr		Box 1	START 4:15 END 4:30
	2		Thin bdd			TIME 15min DRL 15min
493.5	3					RAN — REC 5.0
	4		CLS m.-dk.gr, s.-m.h.	3.9		LOSS Ø UNACC Ø
	5		VE.bkn w/slk. 3.4-7.2		Box 2	DEP 5.1 T/DEP 5.0
						PULL #2
	6		w/6.9 L.C			START 4:38 END 4:50
489.7	7			7.3		TIME 12min DRL 12min
	8		SANDSTONE shy., pig., m.h., m.g. 50°Ang ptg @ 7.4-7.7		Box 3	RAN 5.1 REC 4.2
	9		& 8.1 - 8.6;			LOSS 0.9 UNACC 0.9
487.3	10		SLS			DEP 9.8 T/DEP 10.1
485.9	11		chy, s.-m.h, m.-dk-gr w/slk PFgs	11.3		PULL #3 START 5:03
	12		CLS/SLS Intrbdd; w/ge.cl.se			END 5:40 TIME 37min
	13		shy, m.-dk.gr: ve closely		Box 4	DRL 37min RAN —
	14		SPACED ptgs btwn 11.0 &			REC 9.8
	15		15.0; shy 15.0-15.8			LOSS 0.7 UNACC 0.7
481.1	16		SANDSTONE shy A.g. m.h., m.gr	15.4	Box 5	
479.5	17		grading into			
	18		SLS chy., s.-m.h., m-dkgr			
477.3	19		shy	19.3	Box 6	
	20		CLS (CONT)	(CONT)		(CONT)

ELEVATION TOP OF HOLE						
				496.9	**Hole No.** *M-33/1*	

PROJECT				INSTALLATION		
GALLIPOLIS LOCK & DAM				*OPH-CD*		SHEET *2*
						OF *2* SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		*CLS*		Box 6	Pull #3
	21					DEPTH/DEP 20.6
	22		OCC. SLY, S.-m.h., m-			Pull #4
	23		dk. gr, Shy, w/TR TOSE.			START 5:55
	24		OF gr. CL. VE. bkn. 19.6-		23.6	END 6:21
						TIME 26 min
			20.6 w/0.7 L.C.: VE bkn		Box 7	DRL 26 min
	25		22.0 - 30.3 w/3.1 L.C			RAN 9.7
	26					REC 6.6
	27					LOSS 3.1
	28					UNACC 3.1
	29					
466.6	30				30.3	T/DEP 30.3
	31		*ICL*		Box 8	DEP 30.6
						Pull #5
	32		R. bR, s-m.h., bkn,			START 7:18
	33		SlK 2.5 L.C. btwn 30.3			END 7:40
			& 38.5			TIME 22 min
	34				34.0	DRL 22 min
	35					RAN
	36				Box 9	REC 8.2
	37					LOSS 2.5
	38					UNACC 2.5
458.4			*Bottom HOLE*		38.5	T/DEP + DEP 38.5
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM **1836-A** (ER 1110-1-1801)
JUN 67
GPO 1980 OF - 628 - 603

PROJECT	HOLE NO.
GALLIPOLIS LOCK & DAM	*M-33/1*

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM	**10. SIZE AND TYPE OF BIT** 4 x 5½"
2. LOCATION (Coordinates or Station) MONO M-33 STA 1+90 B	**11. DATUM FOR ELEVATION SHOWN (TBM or MSL)** M.S.L.
3. DRILLING AGENCY W.G. JAQUES	**12. MANUFACTURER'S DESIGNATION OF DRILL** B.-57 MOBILE
4. HOLE NO. (As shown on drawing title and file number) M-33/2	**13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN** — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER WAYNE TICE	**14. TOTAL NUMBER CORE BOXES** 10
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	**15. ELEVATION GROUND WATER** N/A
	16. DATE HOLE — STARTED 1-25-89 — COMPLETED 1-25-89
7. THICKNESS OF OVERBURDEN Ø 496.7	**17. ELEVATION TOP OF HOLE** 496.7
8. DEPTH DRILLED INTO ROCK 37.4	**18. TOTAL CORE RECOVERY FOR BORING** 37.4 %
9. TOTAL DEPTH OF HOLE 459.3	**19. SIGNATURE OF INSPECTOR** JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE			Pull #1
	1		m.h. gr m.g Thin bd		Box 1	START 12:25
495.2			To Flaggy			END 12:40
	2		CLS			TIME 15 min
			S-m.h. gr. grades			DRL 15 min
	3		silty w/interbdd w/			RAN —
			CL/SLS			REC 4.9
	4		0.6 tg SS @ 5.0		3.8	LOSS Ø
			0.2 LOSS 0-5.0			UNACC Ø T/DEP 4.5
	5		Shaley zo.		Box 2	DEP 4.9 Pull #2
			very cl w/occ slt			START 12:50
	6		9.1 to 19.5			END 1:00
			SL, SH AND MASS			TIME 10 min
	7		14.5 - 23.4 1.0 CLS		7.3	DRL 10 min
			w/hd Frac @ 20.7			RAN —
	8		0.1 LOSS 15.0 - 18.9			REC 4.5
			SLK @ 11.6		Box 3	LOSS Ø
	9					UNACC Ø
						T/DEP 24
	10					DEP 7.3
	11				10.8	Pull #3 START 1:05
						END 1:15
	12				Box 4	TIME 10 min
						DRL 10 min
	13					RAN —
						REC 4.9
	14				14.5	LOSS Ø
						UNACC Ø T/DEP 4.3
	15					DEP 4.7 Pull #4
					Box 5	START 1:18
	16					END 1:30
						TIME 12 min
	17					DRL 12 min
						RAN —
	18				18.2	REC 4.9
					Box 6	LOSS Ø
	19					UNACC Ø
	20			(CONT)		(cont)	DEP T/DEP 18.8

ELEVATION TOP OF HOLE							Hole No. M-33/2

PROJECT GALLIPOLIS LOCK; DAM **INSTALLATION** ORH-CD **SHEET** 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		(CONT) CLS		Box 6	PULL#5
	21					START 1:35
	22				21.7	END 1:50
						TIME 15min
						DRL 15min
	23				Box 7	RAN —
						REC 5.2
						LOSS Ø
472.3	24					UNACC Ø T/DEP 24.1
						DEP 24.3
	25		ICL			PULL#6
	26		S-M.h.-R·GR., SLK		26.2	START 1:55
						END 2:10
	27		CRUMBLY to FAIRY MASS			TIME 15min
	28		1.2 LOSS IN bKN ICL		Box 8	DRL 15min
						RAN —
						REC 5.3
	29		29.9 - 37.9			LOSS Ø
						UNACC Ø
						T/DEP 29.3
	30				29.9	DEP 29.7
	31				Box 9	PULL#7
						START 2:15
						END 2:40
	32					TIME 15min
						DRL 15min
	33					RAN —
					33.5	REC 4.9
	34					LOSS Ø
						UNACC Ø T/DEP 33.9
	35				Box 10	DEP 34.9
	36				36.2	PULL#8
						START 2:45
	37					END 3:10
459.3			BOTTOM HOLE			TIME 25min
	38					DRL 25min
						RAN —
	39					REC 4.7
						LOSS Ø T/DEP 38.7
	40					UNACC Ø
						DEP 39.8
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono M-34 STA 0+80B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-34/1

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0   492.7

8. DEPTH DRILLED INTO ROCK 37.2

9. TOTAL DEPTH OF HOLE 455.5

10. SIZE AND TYPE OF BIT 4 X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A   UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/25/89   COMPLETED 1/26/89

17. ELEVATION TOP OF HOLE 492.7

18. TOTAL CORE RECOVERY FOR BORING 37.2 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
492.7			SANDSTONE M.h. ge m.g Th. Bdd To FLAGGY		Box 1	PULL #1 START 20:55 END 21:07 TIME 12min DRL 12min RAN 4.8 REC 4.6 LOSS 0.2 UNACC 0.2
490.8	2		S,m,h,ge o.1us plastic. CLS v.s. 2.3			
490.2	3		SANDSTONE M.h gR u Fg. sL, FLaggy		3.7	
	4					DEP+T/DEP 4.8 PULL #2
	5				Box 2	START 21:20 END 21:35 TIME 15min DRL 15min
	6					
	7				7.4	RAN 4.9 REC 4.9 LOSS 0
489.3	8					UNACC 0
	9		CLS M.h.gR 0.1 - 0.8 pcs w/ evid of mech. grading 0.4 BKN @ END RUN 9.9, gRact sL, sL and more mass @ 14.0 to 17.8 1.3 LC 9.7 - 19.1 0.4 s. CL @ 19.6 UE,S, CL @ 22.3 to 25.3		Box 3	DEP+T/DEP 9.7 PULL #3
	10				10.8	START 21:45 END 22:23 TIME 38min
	11					
	12				Box 4	DRL 38min RAN 10.4 REC 9.1 LOSS 1.3 UNACC 1.3
	13					
	14				14.5	
	15				Box 5	
	16					
	17				17.8	
	18				Box 6	
	19					DEP+T/DEP 17.1 PULL #4
	20		(CONT)		(CONT)	(CONT)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam   HOLE NO. M-34/1

PROJECT Gallipolis Lock & Dam			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	Pull #4
	21					Start 22:35
					21.7	End 23:10
	22					Time 35min
					Box 7	DRL 35min
	23					RAN 9.7
						REC 8.6
	24					Loss 1.1
						UNACC 1.1
467.4	25				25.3	
	26		ICL		Box 8	
	27		R-bn. w/slk ptgs			
	28		1.1 LC btwn 28.8			
	29		0.6 LC btwn 28.8 + 32.6			DEP & T/DEP 28.8
	30		1.0 LC btwn 32.6 + 37L		29.9	Pull #5 Start 9:28 End 9:50
	31				Box 9	Time 22min DRL 22min RAN — UNACC 0.6 REC 3.2
	32					Loss 0.6 T/DEP 32.6 DEP 32.9
	33				33.8	Pull #6 Start 10:02
	34					End 10:35 Time 33min
	35				Box 10	DRL 33min RAN 3.6
	36					REC 2.7 Loss 1.9
455.5	37		Bottom Hole		37.2	UNACC 1.9 T/DEP 37.2 DEP 32.9
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67	(ER 1110-1-1801)	GPO 1980 OF-628-603	PROJECT Gallipolis Lock & Dam	HOLE NO. M-341

DRILLING LOG	DIVISION OCD	INSTALLATION ORH-CD	Hole No. M-34/2 SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4 15½"

2. LOCATION (Coordinates or Station) MONO M-34 STA 0+40B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) M-34/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER STEVE FRY

14. TOTAL NUMBER CORE BOXES 7

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/25/80 COMPLETED 1/26/89

7. THICKNESS OF OVERBURDEN 0 496.8

17. ELEVATION TOP OF HOLE 496.8

8. DEPTH DRILLED INTO ROCK 38.0

18. TOTAL CORE RECOVERY FOR BORING 40

9. TOTAL DEPTH OF HOLE 458.8

19. SIGNATURE OF INSPECTOR JMU

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8						Pull #1
	1		SANDSTONE M.H. gR. Mg, Thk to FLAggy		BOX 1	START 12:25 END 12:40 TIME 15min DRL 15min RAN 4.9 REC 4.9
	2					
493.2	3				3.8	Loss Ø UNACC Ø
	4		CLS			DEPT/DEP 4.9
	5		S-M.h.gR. w/ occ SLK. 0.3 VERT IRR FRAC 489.4 gRading to V-SLT-Sh @ 14.0 MASS w/thin SLS StRgs, SLK @ 16.0 & 16.8 1.4 Loss 10.5 -19.5		BOX 2	Pull #2 START 12:50 END 13:00 TIME 10min
	6					
	7				7.4	DRL 10min RAN 9.9 REC 4.9
	8				BOX 3	Loss Ø UNACC Ø
	9					
	10					DEPT/DEP 10.5
	11				11.1	Pull #3 START 13:05 END 13:15 TIME 10min
	12				BOX 4	DRL 10min RAN 14.3 UNACC Ø REC 4.9 Loss Ø
	13					
	14					DEP 14.3
	15				14.7	Pull #4 START 13:18
	16				BOX 5	END 13:30 TIME 12min DRL 12min RAN 10.2 REC 4.9 Loss Ø UNACC Ø
	17					
	18					
477.3	19					DEP 19.2
	20		CLS (CONT)		19.5 BOX 6	Pull #5 (CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT GALLIPOLIS LOCK & DAM HOLE NO. M-34/2

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 493.0			**Hole No.** M-34/2	
PROJECT GALLipolis Lock & DAM		INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS			PULL #5
	21		M.-dK.ge		Box 6	START 13:35 END 13:50
	22		CORE SPIN 22.1-23.2			TIME 15min DRL 15min
	23		W/0.7LC			RAN 29.4 REC 5.2
473.2					23.6	LOSS Ø UNAC Ø
	24		ILL		Box 7	DEP 24.4 PULL #6 START 13:55 END 14:10
	25		R.bR, S., V2, bKN			TIME 15min
	26					DRL 15min
	27				27.3	RAN 29.7
	28				Box 8	REC 5.3 LOSS Ø UNACC Ø
	29					
	30					DEP 29.7 PULL #7 START 1415
	31				32.0	END 1440
	32				Box 9	TIME 25min DRL 25min RAN 34.6
	33					REC 4.9
	34					LOSS UNACC
	35				Box 10	DEP 34.6 PULL #8 START 1445 END 15:10
	36					TIME 25min DRL 25min RAN 38.0
	37				Box 11	REC 3.4 LOSS Ø
458.0	38		Bottom HOLE		38.0	UNACC Ø DEP 38.0
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A AM 67 (ER 1110-1-1801) GPO 1900 OF - 628-603		PROJECT GALLipolis Lock & DAM		HOLE NO. M-34/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM	10. SIZE AND TYPE OF BIT 4 Y 5½"
2. LOCATION (Coordinates or Station) MONO M-35	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W. G JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE
4. HOLE NO. (As shown on drawing title and file number) M-3511	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN N/A / DISTURBED N/A / UNDISTURBED N/A
5. NAME OF DRILLER WAYNE TICE	14. TOTAL NUMBER CORE BOXES 9
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE STARTED 2/7/89 COMPLETED 2/7/89
7. THICKNESS OF OVERBURDEN Ø 496.7	17. ELEVATION TOP OF HOLE 496.7
8. DEPTH DRILLED INTO ROCK 34.4	18. TOTAL CORE RECOVERY FOR BORING 34.4
9. TOTAL DEPTH OF HOLE 4623	19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE M.C.g, m.h, gR - STA bR To 1.9, L.O LC (mech) 0.0-1.8			Pull #1
	1				Box 1	START 7:30
494.7	2					END 8:00
			SLS/CLS			TIME 30 MIN
	3					DRL 30 MIN
			INTeRbdd, s.-m.h, m.-dk		3.7	RAN —
	4					REC 4.1
			gR., SLy VE.S. 2.0-2.7:			LOSS 1.0 T/DEP 4.1
	5					UNACC 1.0
			occ SLK. pTg. 0.3 L.C.		Box 2	DEP 5.1
	6					Pull #2
			(mech) bTWN 5.1 & 18.0			
	7					START 8:15
						END 9:03
	8				8.2	TIME 48 min
						DRL 48 min
	9					RAN —
					Box 3	REC 9.6
	10					LOSS 0.3
	11					UNACC 0.3
	12				11.9	
	13					
	14				Box 4	
482.5						
	15			SANDSTONE			DEP & T/DEP 15.0
	16			VE sLy, f.g., m.h., m.gR		15.6	Pull # 3
	17			0.1 CLS LEN 15.0 - 15.1		Box 5	START 9:22
478.9	18			gRading 17.0 - 17.8 into			END 10:02
				SLS / CLS			TIME 40 min
	19			InteRBdd, s.-m.h.			DRL 40 min
	20			(CONT)		19.4 Box 6 (CONT)	RAN — REC 10.0 LOSS Ø (CONT)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT GALLIPOLIS LOCK + DAM   HOLE NO. M-3511

	ELEVATION TOP OF HOLE						
		496.7				**Hole No.** M-35/1	

PROJECT GAllipolis Lock & DAm

INSTALLATION ORH-CD

SHEET 2 **OF** 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/cLS		Box 6	Pull #3
	21		M. dk.gr. sLK. pTg @ 1B5			UNACC Ø
	22		S. CLS. SC. 20.6-21.6			
	23					
473.6					23.3	
	24		ICL			
	25		R. - bR. S. - m.h., SLK		Box 7	DEPT/DEP 25.0
	26		O.5 L.C. btwn 25.0 & 39.4			Pull #4
	27				27.0	START 10:25 END 11:18 TIME 53min
	28					DRL 53min
	29				Box 8	RHN — REC 8.9
	30					LOSS 0.5
						UNACC 0.5
	31				30.6	
	32				Box 9	
	33					
	34					
462.3			Bottom HOLE		39.4	T/DEP+DEP 39.4
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67 (ER 1110-1-1801) GPO 1980 OF - 628-603

PROJECT GAllipolis Lock & DAm **HOLE NO.** M-35/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO M-35 STA 5+76 R

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-35/2

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 495.8

8. DEPTH DRILLED INTO ROCK 33.9

9. TOTAL DEPTH OF HOLE 462.4

10. SIZE AND TYPE OF BIT 4 15/2

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/9/89 COMPLETED 2/9/89

17. ELEVATION TOP OF HOLE 495.8

18. TOTAL CORE RECOVERY FOR BORING 33.4 %

19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
495.8			SLS			PULL #1
	1		GR. S.-M.H, SH, BKN			START 5:30
						END 5:42
	2		FNS w/0.2 SPACING, CLS		1	TIME 12 min
						DRL 12 min
	3		GR, S, SH, 2.0,-3.1, SR 3.1/3.5			RAN 5.1
					3.7	REC 4.8
	4		S.S-5.8, SS GR, m.H, F-			LOSS 0.4
						UNRE 0.4
	5		U.E.F 3.5-4.9, 6.5-6.7		2	DPT T/DPD 4.8
	6					PULL #2
						START 5:55
	7					END 6:10
						TIME 15 min
	8				7.2	DRL 15 min
487.0						RAN 4.9
	9				3	REC 3.2
			CLS			LOSS 0.9 T/DPD 8.0
	10		GR, S, SH, SEVERAL BKN +			UNRE 0.9
485.3			FATTY 7.0-9.1, 9.3-9.6			DEP 9.5
	11		SLS		11.2	PULL #3
			GR, S-M.H, SH, BKN			START 6:26
	12					END 6:42
			FNS, .2 11.2-12.6, 20.0			TIME 16 min
	13				4	DRL 16 min LOSS 0.8
			21.5 w/0.3 spacing 14.2-			RAN 4.4 UNRE 0.8
	14					REC 3.6 T/DPD 13.4
			20.0 BKN 13.4-13.6, 18.3-		14.5	DEP 13.8
	15					PULL #4
			18.8, OCC SR 13.6-14.8			START 6:54
	16					END 7:15
			SL F-low 19.0			TIME 21 min
	17				5	DRL 21 min
						RAN 5.9
	18					REC 4.1
						LOSS 1.3
	19					UNRE 1.3
					19.2	DEP 18.6 TDPD 18.6
	20				6 (CONT)	PULL #5 START 7:25

PROJECT GALLIPOLIS LOCK+DAM   HOLE NO. M-35/2

PROJECT Gallipolis Lock + Dam	INSTALLATION ORHCD		SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS			PULL#5 END 7:50
	21					TIME 25min
474.3						DEL 25min
						RAN 5.2
	22		Icl		6	REC 5.0
	23		R. BR, S-M.H, occ SLK		23.1	LOSS 0.2
	24		occ mottled, SH			UNACC 0.2 DEP 23.8
						TDEP 29.0
	25		dK GR 22.2-22.7, 23.1-24.0		7	PULL#6 T/D 29.8
	26		SLICKnSKy ELev 23.1-		26.7	START 8:43 END 7:00 TIME 17min
	27		23.2, 23.6-24.0, 25.1-			DEL 17min RAN 4.4
	28		28.6-32.3-33.4			REC 4.4 LOSS 0
	29				8	UNACC DEP 28.7
	30				28.9	PULL#7 START 9:35 END 9:55
	31					TIME 20min DEL 20min
	32				9	RAN 5.0 REC 4.7
	33		Bottom Hole		33.4	LOSS 0.3 UNACC 0.3 DEP+T/DEP 33.4
462.4	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1960 OF - 628-603

| PROJECT Gallipolis Lock + Dam | HOLE NO. M-35/2 |

DIVISION	INSTALLATION	SHEET 1
OLD	OPH CD	OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

10. SIZE AND TYPE OF BIT 4 Y 5 V6

2. LOCATION (Coordinates or Station) Mono M-36 STA 0+26A

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. G. Jaques

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

4. HOLE NO. (As shown on drawing title and file number) M-36/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A | **DISTURBED** N/A | **UNDISTURBED** N/A

5. NAME OF DRILLER Dave Harper / Steve Frye

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 2/9/89 COMPLETED 2/9/89

7. THICKNESS OF OVERBURDEN 456.3

17. ELEVATION TOP OF HOLE 496.3

8. DEPTH DRILLED INTO ROCK 35.9

18. TOTAL CORE RECOVERY FOR BORING 33.3 %

9. TOTAL DEPTH OF HOLE 460.9

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.3			SANDSTONE LT gr, M.H., m-c.g. occ			Pull #1
495.1	1		CLS frags Fe surface stain 0.0-0.5			START 1:00
			SLS			END 1:20
	2		gr, S, m.H, BKN pns ~.3		1	TIME 20 min
			space sa, cl from .03 @ 2.8			DRL 20 min
	3		45° Joint 1.9-2.1 BKN 3.4-3.6			RAN 5.0
492.8			sa Cgr m.H, f.g. 3.4-3.5		3.6	REC 5.0
	4		SLS/CLS			LOSS 0
			SLS gr, 5-m.H, sh, 3.5-			UNREC 0
	5					DEPT T/DEP 5.0
			6.6, 7.5-11.1, 11.5-13.3, CLS		2	Pull #2
	6					START 1:40
			gr, S, sh 6.6-7.5, 11.1-11.5			END 1:55
	7				7.1	TIME 15 min
			12.3-13.3, BKN pns 0.2 space			DRL 15 min
	8					RAN 5.0
			THROUGHOUT, BKN 6.0-6.6			REC 3.2
	9					LOSS 1.8
			10.0-10.2		3	UNREC 1.8 DEP 9.8
	10					T/DEP 10.0
	11					Pull #3
						START 2:10
	12					END 2:30
					12.3	TIME 20 min
483.0	13					DRL 20 min
			SLS		4	RAN 4.6
	14		gr, S-m.H, Sh, BKN pns			REC 4.6
	15					LOSS 0 UNREC 0
			0.2 spacing, sa 13.3-15.8			DEP 14.6 T/DEP 14.6
	16				15.8	Pull #4
			few BKN, SS, gr m.H, V.F.			START 2:37
	17					END 2:55
			g., 13.9-15.0, CLS, gr, S, sh			TIME 18 min
	18				5	DRL 18 min
			f.g. -20.3, 21.4-21.8			RAN 4.2
	19					REC 4.2
						LOSS 0
					19.4	UNREC 0 T/DEP 18.8
	20		CONT		6 (cont)	DEP 19.6
						Pull #5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock + Dam

HOLE NO. M-36/1

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 496.3				Hole No. M-36/1	
PROJECT Gallipolis Lock + Dam			INSTALLATION ORH-CD		SHEET 2 OF 2 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS			PULL#5
	21				6	START 3:00 END 3:20 TIME 20min DRL 20min RAN 4.0 REC 4.0
	22					
473.5	23				22.8	LOSS 0 UNACC 0 DRP+TIDEP 22.8
			ICL			PULL#6
	24		R.BR, S-M.H, OCC SLK		7	START 3:57 END 3:49
	25		OCC MOTTLED, W/GR-GNGR			TIME 12min
	26		GKGR, NEGOS=6.0		25.7	DRL 12min RAN 3.7
	27		CL ABOVE 29.3 + SH BELOW			REC 3.7 TIDEP 26.5 LOSS 0
	28				8	UNACC 0
	29		SEVERELY BKN 22.8-23.1			DRP 28.2 PULL#7
	30		29.1-29.3, 25.1-25.5, 28.6-		29.6	START 4:12 END 4.38
	31		29.1-30.9-30.1		9	TIME 26min DRL 26min RAN 6.8
	32					REC 5.1 LOSS 1.7
463.3	33		BOTTOM HOLE		33.3	UNACC 1.7 TIDEP 33.3
	34					
	35					DRP 35.4
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1980 OF-828-603	PROJECT Gallipolis Lock + Dam	HOLE NO. M-36/1

DRILLING LOG

DRILLING LOG	DIVISION OPD	INSTALLATION OPH-CP	SHEET 1 OF 2 SHEETS

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
Mono M-26 STA 0+60A

3. DRILLING AGENCY
W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-26/2

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 495.4

8. DEPTH DRILLED INTO ROCK 32.3

9. TOTAL DEPTH OF HOLE 463.1

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/10/89 COMPLETED 2/10/89

17. ELEVATION TOP OF HOLE 495.4

18. TOTAL CORE RECOVERY FOR BORING 32.3

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
495.4			SLS			Pull #1
	1		gR, S, m.H, Sh, Bkn pns			START 15:95
	2		0.0-5.1 w/0.2 spacing slt		1	END 16:00
	3		To micg-Bkn w/l.c 0.0-5.1			TIME 15min
	4		Cls dk.gR, V.E.S. severely Bkn			DRL 15min
	5		4.6-4.9, sg below 5.1 FW		5.1	RAN 4.6
	6		Breaks, SS gR, m.H F.g			REC 3.0
	7		6.2-7.1			LOSS 1.6
487.7	8		Cls		2	UNAcc 1.6 Dep 4.6
	9		gR, S, Sh, severely Bkn		9.1	Pull #2
486.0			7.7-8.0, 8.6-8.8, 9.1-9.1			START 16:10
	10		SLS			END 16:30
	11		gR. S. -m.H, Sh, Bkn pns		3	TIME 20min
	12		0.4 spacing, Bkn pns			DRL 20min
	13		0.2 spacing 11.2-11.9, Sg		12.6	RAN 5.5
	14		w/occ Thin gradational			REC 5.0
	15		interbeds of SS V.E.F.g.		4	LOSS .5
	16		11.9-12.0, Cls gR, S, Sh		16.5	UNAcc 15
	17		Bkn pns w/0.1 spacing w/			Dep 10.0
	18		occ Cl coating 16.6-17.6		5	Pull #3
	19		18.2-18.4, 18.7-18.9			START 16:52
	20		(cont)		(cont)	END 17:06

PROJECT Gallipolis Lock + Dam   HOLE NO. M-26/2

ELEVATION TOP OF HOLE						
				4954	Hole No. M-36/2	

PROJECT **GALLIPOLIS LOCK + DAM**

INSTALLATION **ORH-CD**

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		5	PULL#5
479.3	21				20.9	START 18:11
			ICL			END 18:22
	22		R.BR, S-M.H. Sh, occ SLK			TIME 11min
					6	DRL 11 min
	23		MOTTLED, w/GR + GN.GR			RAN 3.6
						REC 3.6
						LOSS 0
						UNACC 0
	29		dkGR ABOVE 25.0/+ R.BR		24,0	DEP 23.6
						PULL#6
	25		Below @ 22.0-22.2, 22.8-			START 18:45
						END 18:55
	26		23.1, CL ABOVE 29.6, SLT		7	TIME 10min
						DRL 10min
	27		Below 29.6, severely BKN			RAN 3.2
			22.9-23.1, 23.9-24.0, 25.0-			REC 3.2
	28					LOSS 0
			25.3, 26.9-28.6		27.9	UNACC 0
	29					DEP 28.6
					8	PULL #7
	30					START 19:96
						END 20:05
	31					TIME 19min
						DRL 19min
					31.2	RAN 3.6
	32				9	REC 2.8
463.1			Bottom Hole		32.3	LOSS .8
						UNACC .8
	33					DEP 32.3
	39					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1980 OF - 828-603

PROJECT **GALLIPOLIS LOCK + DAM**   HOLE NO. **M-36/2**

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO M-37 STA 0+70A

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-37/1

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.3

8. DEPTH DRILLED INTO ROCK 39.6

9. TOTAL DEPTH OF HOLE 461.7

10. SIZE AND TYPE OF BIT 4×5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/9/89 COMPLETED 2/9/89

17. ELEVATION TOP OF HOLE 496.3

18. TOTAL CORE RECOVERY FOR BORING 34.9

19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.3			SLS/CLS			PULL #1
	1		SLS gr,-S,-m.H, sh 0.7-2.0,			START 10:35
			2.2-2.8, CLS gr. S, sh 0.0-0.7			END 10:45
	2		2.0-2.2 Sa Below 2.3, Bkn		1	TIME 10 min
493.5			1.6 - 2.2			DRL 10 min
	3		SANDSTONE			RAN 4.6
			gr, m.H, F.g.		3.5	REC 4.4
	4					LOSS 0.2
	5					UNACC 0.2 T DEP 4.6
					2	DEP 5.1
490.1	6					PULL #2
	7		SLS			START 11:00
			gr, S-m.H, Sh, Bkn Dns		7.2	END 11:15
	8		0.3 SPACING, CL ABOVE 13.0			TIME 15 min
						DRL 15 min T/DEP 7.8
	9		+ Below 21.5, Bkn Mech		3	RAN 5.0
	10		7.0-9.6 10.0-10.3, 18.6-18.8			REC 5.0
						LOSS Ø
	11		19.6-19.7, Solid 10.3-13.0		10.3	UNACC Ø DEP 9.9
	12		Sa 19.9-15.5, CLS gr,S,Sh			PULL #3
						START 12:00
	13		20.1-20.8		4	END 12:40
	14					TIME 40 min
						DRL 40 min
	15				15.0	RAN 5.1
	16					REC 5.1
						LOSS Ø
	17				5	UNACC Ø
						T/DEP 14.6
	18					DEP 15.9
						PULL #4
	19					START 1:00
					17.5	END 1:20
	20		(CONT)		6 (CONT)	TIME 20 min
						DRL 20 min
						RAN 5.7
						REC 5.7
						LOSS Ø
						UNACC Ø
						DEP +T/DEP 19.8

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE.
MAR 71 (TRANSLUCENT)

PROJECT GALLIPOLIS Lock + DAM HOLE NO. M-37/1

ELEVATION TOP OF HOLE	496.3	Hole No. M-3711

PROJECT: Gallipolis Lock + Dam
INSTALLATION: OPH-CO
SHEET 2 **OF** 2 **SHEETS**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		6	PULL#5
	21				21.0	START 1:30
						END 1:55
	22					TIME 25min
473.8						DRL 25min
	23		ICL		7	RAN 4.8
			R. BR, S-M.H, SH, OCC			REC 4.7
	24					LOSS 0.1
			MOTTLED W/GR-GNGR.			UNACC 0.1
	25				24.7	DEPTH/DEP 24.7
			SCC SLK, HKGR. ABOVE 25.0			PULL#6
	26					START 2:10
			SEVERELY BKN W/SCH 29.5		8	END 2:30
	27					TIME 20min
			24.9, 29.4-23.?, 33.2-33.7			DRL 20min
	28					RAN 4.9
			CL ABOVE 31.2 + SH BELOW			REC 4.9
	29				28.5	LOSS Ø
						UNACC Ø
	30				9	DEP 29.7 T/O-DEP 6
	31					PULL #7
						START 2:45
	32				32.0	END 3:10
						TIME 25min
	33				10	DRL 25min
						RAN 4.8
461.9	34		BOTTOM HOLE		34.4	REC 4.8
	35					LOSS Ø
	36					UNACC Ø
						DEP 34.L T/DEP 34.4
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

PROJECT	HOLE NO.
Gallipolis Lock + Dam	M-3711

Hole No. M-37/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORN-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO M-37 STA 1+15A

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-37/2

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 495.9

8. DEPTH DRILLED INTO ROCK 31.7

9. TOTAL DEPTH OF HOLE 464.0

10. SIZE AND TYPE OF BIT 4 7/8"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 8

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | STARTED 2/8/89 | COMPLETED 2/10/89

17. ELEVATION TOP OF HOLE 495.9

18. TOTAL CORE RECOVERY FOR BORING 31.9 %

19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
495.9			SANDSTONE			PULL #1
	1		M.H, GR, BKN FROM		Box 1	START 8.45
			.05 TO .6 THIN CH ZONES			END 9:00
	2		0.1 LOSS 495 - 494.1			TIME 15 MIN
						DRL 15 MIN
	3					RAW —
						REC 4.4
	4				3.0	LOSS 0.1
491.5						UNACC 0.1 T/DED 4.5
	5		CLS/SLS		Box 2	DEP 5.0
						PULL #2
	6		INTERBDD, SH, THIN BD			START 9.15
	7		TO FLAGGY, NO S CL		7.3	END 9.30
						TIME 15 MIN
	8				Box 3	DRL 15 MIN
						RAN —
	9					REC 4.9
						LOSS Ø
	10					UNACC Ø T/DEP 9.4
	11				10.9	DEP 9.8
484.4						PULL #3
						START 9.44
	12		SANDSTONE		Box 4	END 10:05
			M.H GR, F.Y 0.5 60° FRAC			TIME 21 MIN
	13		@ 12.6 RESCALED, 0.3 LOSS			DRL 21 MIN
481.9	14					RAN —
						REC 4.0 T/DEP 13.2
	15		CLS		14.9	LOSS 0.3
			DK. GR, M.H, SH (CAVE IN)			UNACC 0.3 DEP 13.2
	16		0.2, S. CRUMBLY ZO @		Box 5	PULL #4
			14.0 W/SCAT, SLT ZONES			START 10.20
	17		NEAR BASE 1.2 LOSS			END 10:44
			18.2 TO 21.6			TIME 24 MIN
	18					DRL 24 MIN
					18.2	RAN —
	19				Box 6	REC 4.2 T/DE 18.2
						LOSS —
	20		(CONT)		CONT	UNACC —
						DEP 19.2
						PULL #5

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT GALLIPOLIS LOCK & DAM   HOLE NO. M-37/2

PROJECT GALLIPOLIS LOCK : DAM				**INSTALLATION** ORH-CD			**SHEET** 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
	20		CLS		BOY 6	PULL #5 START 11:00 END 11:17 TIME 17min T/DEP 21.6 DRL 17min
474.1	21					
	22		ICL		22.9	RAN — REC 2.2 LOSS 1.2 UNACC 1.1
	23		M.H, R, SLK, with scat			
	24		S. 20		BOY 7	DEP 24.4
	25					PULL #6 START 9.50 REC 4.8 END 10:30 LOSS 0.1 TIME 40min UNACC 0.1
	26					DRL 4min RAN —
	27					T/DEP + DEP 26.8 T/DEP 26.9
	28					PULL #7 START 13:50 RAN — END 4:12 REC 8 TIME 22min LOSS 3.5 DRL 22min UNACC 3.5 DEP 28.4
	29				29.4	PULL #8 START 4:43 END 15:25 T/DEP 29.4 TIME 42min
	30				BOY 8	DRL 12min UNACC — RAN — REC 2.7 LOSS —
	31					DEP 30.8 PULL #9
464.0	32		BOTTOM HOLE		31.8	T/DEP 31.8 REC 1.6 START 4:15 LOSS 0.5 END 4:30 UNACC 0.5 TIME 15min DRL 15min RAN —
	33					DEP 33.9
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A   JUN 67   (ER 1110-1-1801)   GPO 1990 OF - 628 - 603

| PROJECT GALLIPOLIS LOCK : DAM | HOLE NO. M-37/2 |

DRILLING LOG	DIVISION ORD	INSTALLATION ORH<D	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) Mono M-30 STA 1125A

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-38/1

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.1

8. DEPTH DRILLED INTO ROCK 32.1

9. TOTAL DEPTH OF HOLE 464.5

10. SIZE AND TYPE OF BIT 4 x 5 ½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — **DISTURBED** N/A **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/8/89 COMPLETED 2/9/89

17. ELEVATION TOP OF HOLE 496.1

18. TOTAL CORE RECOVERY FOR BORING 32.0

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.1			Interbdd ss/sls			Pull #1
	1		Ucet, 0. Irr J.T. in ss		1	Start 8:30
			1.1-1.9			End 8:50
493.8	2					Time 20 min
						DRL 20 min
492.9	3		CLS S, m-dKgr : UE.S. 2.3-2.6			RAN —
			SANDSTONE		3.8	REC 4.3
	4		Sky, f-m.g, m.h., m.gr			Loss Ø
491.3			Tight contact			UNACC Ø T/Dep 4.3
	5		CLS		2	
	6		S.-m.h, m.-dk.gr w/			DEP 5.9
			occ sm ss inscl &			Pull #2
	7		Sky Lam. bKn 7.3-9.0		7.0	Start 9:01
			w/0.3 L.C			End 9:20
	8					Time 19 min UNACC —
						DRL 19 min
	9				3	RAN — T/Dep 9.0
486.5						REC 4.1
	10		SLS CLy, S.-m.h, m.-dk.gr.sky			Loss — DEP 9.9
485.4						Pull #3
485.2	11		SS sky, f.o. m.h, m.gr		11.0	Start 9:30
			SLS			End 9:50
	12		CLy, S.-m.h, m.-dk.gr : bKn cly lens 11.9-12.3		4	Time 20 min
483.9						DRL 20 min
	13		SANDSTONE Sky, f.g., m.h. m.gr grading sky			RAN —
482.3						REC 4.8
	14		SLS		13.2	Loss — T/Dep 13.8
	15		S.-m.h, m.gr w/cls		5	UNACC — DEP 13.5
						Pull #4
	16		Lenses cls : 14.2-15.1			Start 10:00 End 10:40
						Time 40 min Loss —
	17		sk. sa sls 15.1-17.0			DRL 40 min UNACC —
						RAN —
	18		R. bR. cls 17.0-17.4		13.9	REC 5.2
						DEP + T/Dep 17.9
	19		M spaced Hor c'gs		6	Pull #5 Start 10:50
	20		Below 17.4		(cont)	End 11:10 Time 20 min cont

PROJECT GALLIPOLIS LOCK & DAM			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS (CONT)		6	PULL #5 DRL 20min RAN — REC 4.9 LOSS ∅ UNACC∅
	21					
474.4					21.5	
	22		ICL			DEPT T/DEP 22.5' PULL #6
	23		S-M.N, gr TOR, SLK		7	START 8:00 END 8:36 TIME 36min
	24		bKN to 27.9			
	25				254	DRL 36min RAN —
	26					REC 5.0
	27				8	LOSS ∅ UNACC ∅
	28				28.3	DEP 28.0 T/DEP 27.9
	29					PULL #7 START 9:21
	30				9	END 9:50 TIME 29min
	31					DRL 29min RAN —
464.0	32		BOTTOM HOLE		32.1	REC 4.7 LOSS ∅
	33					UNACC ∅ T/DEP 32.6
	34					DEP 34.2
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A   (ER 1110-1-1801)   GPO 1980 OF - 628 - 603

PROJECT GALLIPOLIS LOCK & DAM	HOLE NO. M-38/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO. M-38 STA. 1+49 A

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-38/2

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 476.6

8. DEPTH DRILLED INTO ROCK 33.0

9. TOTAL DEPTH OF HOLE 463.6

10. SIZE AND TYPE OF BIT 4"X5¼"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | **DISTURBED** N/A | **UNDISTURBED** N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | STARTED 2/7/89 | COMPLETED 2/7/89

17. ELEVATION TOP OF HOLE 496.6

18. TOTAL CORE RECOVERY FOR BORING 33.0

19. SIGNATURE OF INSPECTOR LMU

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
495.8			SANDSTONE Sh.y., P.g. m.h, m.gr VE.brn-w O.L.L.c			PULL #1
	1					START 9:15
	2		ChS S.-m.h., Shy, M. dk.gr		Box 1	END 9:37
						TIME 22 min
						DEL 22 min
	3		VE. S. 2.6-3.5			RAN —
493.1					3.8	REC 4.5
	4		SANDSTONE Shy, P.g., m.h, m.gr			LOSS 0.2
	5					UNAC 0.2 T/DEP 4.7
			Shy.5.0 : SLK CONTACT		Box 2	DEP 5.0
						PULL #2
490.2	6		@ 6.4			START 9:50
	7		ChS S.-m.h., m.-dk.gr			END 10:12
					7.5	TIME 22 min
	8		CLOSELY SPACED PTGS			DEL 22 min UNACC Ø
						RAN —
487.3	9		w/cl. coa/fld		Box 3	REC 4.6
	10		ChS/SLS Shy, S.-m.h, m. dk.gr			LOSS Ø
						DEP 9.3 T/DEP 9.2
	11				11.1	PULL #3
						START 10:17
	12					END 10:30
						TIME 13 min
					Box 4	DEL 13 min
483.2	13					RAN —
						REC 3.6 T/DEP 12.9
	14		SANDSTONE VE.Shy, P.g. m.h., m.gr		14.1	LOSS Ø
482.0			O. 4.2 - VERT, IRR, TT. 13.7-14.3			UNACC Ø
	15		SLS/ChS			DEP 14.9
					Box 5	PULL #4
	16		INTERBDD, S.-m.h., m.-			START 10:46
	17		dk.gr occ.Shy: CL.oschy			END 11:17
						TIME 31 min
	18		SPACED hor.PTGS. 16.7-			DEL 31 min
						RAN —
	19		w/thr gr.cl.coa/fld.		18.4	REC 7.4
477.3					Box 6	LOSS Ø
	20		TRANS.ZONE. m.-dk.gr.A.S-m.h SZL	(CONT)		UNACC Ø
						(CONT)

PROJECT GALLIPOLIS LOCK & DAM | HOLE NO. M-38/2

PROJECT Gallipolis Lock+Dam				INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	20		TRANS. ZONE			Pull #4	
	21		m-dk.gr. s.-m.h., SlR		6		
	22				22.1	T/DEP 22.3	
	23					DEP 22.9	
	24				7	Pull #5 START 11:35 END 11:05	
472.0						Time 15min	
	25		ICL		25.9	DRL 15min T/DEP 25.4	
	26		R. bR, S.-m.h., bKN, SLK			RAN — REC 3.1 uNACC 0	
	27		2.4 L.C. bTwn 25.4, 26.7			LOSS 0	
	28				8	DEP 27.4 Pull #6 START 1:05	
	29				29.3	END 1:39 Time 34min	
	30					DRL 34min RAN —	
	31					REC 5.7	
	32				9	LOSS 2.4 uNACC 2.4	
463.6	33		BOTTOM HOLE		33.0	T/DEP 33.1	
	34					DEP 33.9	
	35						
	36						
	37						
	38						
	39						
	40						
	41						
	42						
	43						
	44						

ENG FORM 1836—A (ER 1110-1-1801) GPO 1960 OF - 628 - 603   PROJECT Gallipolis Lock; Dam   HOLE NO. M-38/2

DRILLING LOG	DIVISION ORD		INSTALLATION OPH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT
Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station)
MONO M-39 STA 1+57 A

3. DRILLING AGENCY
W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number)
M-39/1

5. NAME OF DRILLER
WAYNE TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ◊ 496.3

8. DEPTH DRILLED INTO ROCK 32.9

9. TOTAL DEPTH OF HOLE 463.4

10. SIZE AND TYPE OF BIT 4 Y5½ ″

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | STARTED 2/7/89 | COMPLETED 2/7/89

17. ELEVATION TOP OF HOLE 496.3

18. TOTAL CORE RECOVERY FOR BORING 32.9

19. SIGNATURE OF INSPECTOR

ELEVATION 496.3 a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
495.8			SANDSTONE Sky f.g., m.h., m.ge na.e. ICC, st. Q.st. co-ek			Pull #1
495.4			CLS sky, dk gr, s-m.h. sf wca @ 0.9			START 13:10
	1		SANDSTONE sky, f.g. m.h, m.gr Thin (0.2) st bdd pLns.			END 13:19
494.5					Box 1	TIME 9min
	2		CLS			DRL 9min
	3		Shy, s-m.h, mid Kige VE BKN 1.8-4.2			RAN —
						REC 5.1
	4				3.9	LOSS ⊘
491.7						UNACC ⊘
	5		SANDSTONE sky, f-m.g. m.h, m.gR UCR PTg 4.6-4.7; MASS		Box 2	T/DEP + DEP 5.1
	6		below 4.7; core spin @ 7.2			Pull #2
	7					START 13:52
489.1					7.2	END 14:18
			SLS sa (Trans) s-m.h., m., dk ge			TIME 26min
488.0	8					DRL 26min
			CLS			RAN —
	9		Shy. s-m.h. occ shy, s-m.h, m.ge R.be 8.6-9.7; shy		Box 3	REC 9.0
	10		10.3-10.8 Icl shi R.be			LOSS ⊘
			11.4-11.9; bkn w/shk			UNACC ⊘
	11		11.9-12.1		10.8	
484.2	12				Box 4	
	13		SANDSTONE sky, f.g., m.h., m.gR, bkn (mech) 13.6-19.1 w/huyge			
482.2	14		CL @ 19.1		19.1	T/DEP + DEP 19.0
			CLS-			Pull #3
	15					START 14:30
	16		shy, m.-dk.gR. s:m.h pTs shy bkn (mech)		Box 5	END 15:01
	17		14.1-19.3 R.be (ICL) 18.2-19.3::			TIME 31min
						DRL 31min
	18				17.8	RAN —
					Box 6	REC 9.3
	19					LOSS ⊘
	20				(cont)	UNACC ⊘ (cont)

	ELEVATION TOP OF HOLE						
							496.3		Hole No. M-39/1

PROJECT: GALLIPOLIS LOCK & DAM

INSTALLATION: OEH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					Pull #3
	21				6	(cont)
474.7					11.5	
	22		TRANS. ZONE			
472.9	23				7	T/DEP 23.4
	24		ICL			DEP. 29.0
			S.-m.h, R.br, SLK			Pull #4
	25		L.C. Btwn 23.4			START 3:15
	26				25.4	END 3:58
						TIME 43min
	27				8	DRL 43 min
						RAN 9.5
	28					REC 9.4
					28.3	LOSS 0.1
	29					UNACC 0.1
	30				9	
	31					
	32				32.0	
463.4	33		Bottom Hole			DEP & T/DEP 32.9
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	43					

ENG FORM 1836-A (ER 1110-1-1801)
JUN 67

GPO 1980 OF - 628-603

PROJECT: GALLIPOLIS LOCK & DAM

HOLE NO. M-39/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

10. SIZE AND TYPE OF BIT 4 x 5½

2. LOCATION (Coordinates or Station) MONO M-39 STA 2+03A

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) M-39/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

5. NAME OF DRILLER DAVID HARPER / FRY

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 2/7/89 COMPLETED 2/7/89

7. THICKNESS OF OVERBURDEN Ø 496.5

17. ELEVATION TOP OF HOLE 496.5

8. DEPTH DRILLED INTO ROCK 33.4

18. TOTAL CORE RECOVERY FOR BORING 33.4

9. TOTAL DEPTH OF HOLE 463.1

19. SIGNATURE OF INSPECTOR LMH

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5			SLS			PULL #1
	1		Chy, s.-m.h, dk gr., shy			START 2:20
			Th.nsh. ptgs 0.0-1.4 Trans			END 2:36
494.1	2		sa 1.7-2.9: cl coa		1	TIME 16 min
						DEL 16 min
	3		SANDSTONE			RAN 4.8
			shy f-m.g., m.h, m.gr		3.7	REC 4.8
	4		grading shy @ 4.2			LOSS Ø
491.7						UNACC Ø DEP 4.8
	5		SLS		2	PULL #2
	6		Chy-s.-m.h., m. dk.gr.			START 2:45
			ve shy 4.8-5.5: cl coa			END 3:00
	7		ptgs @ 5.4: s.s. huy cl		7.2	TIME 15 min
			se @ 7.6-8.1 w/0.1 L.C			DEL 15 min
	8		shy ptgs 9.2-9.6: 12.0			RAN 4.4
			-12.5			REC 4.3
	9					LOSS 0.1
					3	UNACC 0.1 DEP 9.2
	10					PULL #3
						START 3:07
	11					END 3:20
					10.8	TIME 13 min
	12					DEL 13 min
484.0						RAN 4.4
	13		SLS - sa		4	REC 4.4
482.9			(TRANS ZONE)			LOSS Ø
						UNACC Ø DEP 13.4
	14		SANDSTONE		14.6	PULL #4
481.6			shy. f.g, m.h m.gr. ha 0, irr.			
	15		coa JT. 14.0-14.4: bkn			START 15:50
			14.4-14.9: grading into			END 16:19
	16		SLS / cLS		5	TIME 29 min
			Interbdd w/thin -huy			DEL 29 min
	17		gr -dk ge. SE: sa 14.9-16.2			RAN 10.5
			:5. huy chy se. btwn			REC 9.3
	18		17.2 : 20.2 w/occ r.bn		18.4	LOSS 0.7
			SLK. Icl, zos : prob		6	UNACC 0.7
	19		AREA OF 0.7 LC.			
	20		(CON'T)		(CON'T)	(CON'T)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam HOLE NO. M-39/2

| ELEVATION TOP OF HOLE | | | | | 496.5 | | Hole No. M-39/2 | |

PROJECT GALLIPOLIS Lock & DAm
INSTALLATION ORH-CD
SHEET 2 **OF** 2 **SHEETS**

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS			(CONT)
	21				6	PULL#4
474.3	22				22.2	
	23		ICL			
	24		S.-m.h., br.gr.-R.br			DEP 28.1
	25		SLK VE.S. bkn 22.9-		7	PULL#5
	26		23.4 : S. 23.4-29.1 : VE			START 16:43
	27		bkn 29.1-28.6 w/i.oLc		27.4	END 17:17
	28					TIME 34min
						DRL 34min
	29				8	RAN 9.3
	30					REC 9.3
	31					LOSS 0
	32				31.3	UNACC 0
	33				9	
463.1			Bottom HOLE		33.4	DEP 33.4
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MOND M-40 STA 2+13 A

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) M-40/1

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.4

8. DEPTH DRILLED INTO ROCK 39.0

9. TOTAL DEPTH OF HOLE 462.4

10. SIZE AND TYPE OF BIT 4 x 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 8

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/7/89 | COMPLETED 2/7/89

17. ELEVATION TOP OF HOLE 496.4

18. TOTAL CORE RECOVERY FOR BORING 34.0' %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
496.4			SLS			Pull #1
	1		Cly, s-m.h. dk.gr., shy			START 16:20
			bkn 0.0 - 0.3 w/oil LC			END 16:40
494.4	2				1	TIME 20 min
						DRL 20 min
	3		SANDSTONE			RAN 4.3
			shy, m.gr, m.g bkn			REC 4.2 UNACC 0.1
	4		2.5-3.3 (mech)		3.8	LOSS 0.1
			0. PTgs w/core spin			DEP 4.3
			4.9 ptgs 5.5; 6.0			
	5					Pull #2
	6				2	START 16:45
490.0						END 17:20
	7		CLS/SLS		7.2	TIME 35 min
						DRL 35 min
	8		interbdd. dk.gr s.m.h			RAN 9.8
			shy w/thin To huy ch			REC 5.2
	9					LOSS 4.6
	10		se ve bkn. 7.2-19.1 w/			UNACC 4.6
	11		4.6 L.C. : ve bkn 14.1		3	
	12		-14.4 : core spins			
	13		@ 14.4, 14.9 : mass			
	14		15.2 -18.9 (mostly cls)			DEP 19.1
	15		bkn 18.9-19.3 ; 20.7		15.2	Pull #3
	16		-21.7			START 17:30
	17				4	END 18:30
						TIME 60 min
	18					DRL 60 min
						RAN 8.5
					18.9	REC 8.3
	19				5	LOSS 0.2
	20		(CONT)		(CONT)	UNACC 0.2
						(CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam

HOLE NO. M-40/1

PROJECT GALLIPOLIS LOCK & DAM				INSTALLATION OEH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	20		CLS/SLS		5	Pull #3 (CONT)	
479.7	21						
	22		ICL		22.6	DEP 22.6	
	23		R.br, S-m.h, SLK			Pull #4	
	24		bkn w/0.1 L.C. BTwN			START 18.45	
						END 19:20	
	25		21.7 & 22.2		6	TIME 35 min	
						DRL 35 min	
	26		1.0 L.C. bTwN 27.6 &			RAN 5.0	
						REC 5.0	
	27		34.0			LOSS Ø	
						UNACC Ø	
	28					DEP 27.6	
						Pull #5	
	29					START 19:30	
						END 20:00	
	30				29.9	TIME 30 min	
						DRL 30 min	
	31					RAN 6.4	
						REC 5.4	
	32				7	LOSS 1.0	
						UNACC 1.0	
	33						
462.4	34		Bottom Hole.			DEP 34.0	
	35						
	36						
	37						
	38						
	39						
	40						
	41						
	42						
	43						
	44						

ENG FORM 1836-A AIN 67 (ER 1110-1-1801)   GPO 1980 OF-628-603

PROJECT GALLIPOLIS LOCK & DAM	HOLE NO. M-40/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono M-40 STA (2+93) A

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) N-40/2

5. NAME OF DRILLER STEVE FRYE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.9

8. DEPTH DRILLED INTO ROCK 33.1

9. TOTAL DEPTH OF HOLE 463.8

10. SIZE AND TYPE OF BIT 4X5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/7/89 COMPLETED 2/7/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 33.1

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SLS			Pull #1
	1		Cly, dk. gr, s-m.h, shy		Box 1	START 18:20
	2		UE BKN 0.0-2.5. w/an			END 18:35
			L.C. UE S 2.5-2.9			TIME 15 min
494.0	3					DRL 15 min
			SANDSTONE			RAN 4.8
	4		Shy. P. mg, m.h, mg hd, btn	3.8		REC 4.1
492.9			, t. 3.1 - 3.6			LOSS 0.7
	5		CLS/SLS			UNACC 0.7
			Inter bdd - dk gr., s-m.h		Box 2	DEP 4.8
	6		shy w/occ thin-hvy cl			Pull #2
			se. Closely spaced hor			START 18:50
	7		ptgs throughout 0.7			END 17:25
			L.C. btwn 4.5'9.8; ves.			TIME 35 min
	8		7.8-9.8; Closely spaced	8.2		DRL 35 min
			ptgs 7.8-11.7 w/poss			RAN 5.0
	9		Loss			REC 4.3
	10				Box 3	LOSS 0.7
						UNACC 0.7
	11					DEP 9.8
485.2						
	12		SANDSTONE	12.2		Pull #3
			Shy., fago, M.H, m.gr.			START 19:35
	13					END 20:20
482.9	14				Box 4	TIME 45 min
			CLS/SLS			DRL 45 min
	15		Inter bdd, s.m.h, dk.			RAN 9.7
			gr. Closely spaced			REC 8.8
	16		ptgs w/occ core	16.0		LOSS 0.9
			spins (tr.cl.se) 19.0-			UNACC 0.9
	17		19.5 w/0.9 L.C.		Box 5	
	18					
477.6	19					DEP 19.5
	20		SLS (Cont)		(Cont)	Pull #4

PROJECT Gallipolis Lock & Dam	HOLE NO. N-40/2

PROJECT GAllipolis Lock's DAm			**INSTALLATION** ORH-CD			**SHEET** 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.5	20		SLS MLM. DK. GR		5 20.4	Pull #4
	21		ICL			START 21:05
	22		bR. gR. -R. bR, S-m.h.		6	END 21:50 TiME 45min DRL 45min
	23		SLX VELKN TO 29.1			RAN 9.6 REC 9.6
	24		1.2 LC ETWN 29.1		24.3	Loss Ø UNACCØ
	25		+ 33.1			
	26					
	27				7	
	28				28.2	Pull #5 START 23:20
	29					END 23:40 TiME 20min DEP 29.1
	30				8	DRL 20min RAN 4.0
	31				31.1	REC 2.8 Loss 1.2
	32				9	UNACC 1.2
463.8	33		BOTTOM HOLE		33.1	DEP 33.1
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1969 OF-829-503 | PROJECT GAllipolis Lock's DAm | HOLE NO. M-40/2
JUN 67

DRILLING LOG	DIVISION OPD		INSTALLATION ORH-CD		SHEET / OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO M-41 STA 2+53A

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-41/1

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.3

8. DEPTH DRILLED INTO ROCK 35.1

9. TOTAL DEPTH OF HOLE 462.2

10. SIZE AND TYPE OF BIT CX5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/7/89 COMPLETED 2/8/89

17. ELEVATION TOP OF HOLE 497.3

18. TOTAL CORE RECOVERY FOR BORING 35.1

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.3			SLS			Pull #1
	1		Cly, S-m.h., dk.gr., shy			START 21:00
			bkn 0.0-0.5: CLS Len		Box 1	END 21:15
	2		1.9-2.3 becoming sa @			TIME 15 min
			2.7			DRL 15 min
494.2	3					RAN 4.8
			SANDSTONE		3.6	REC 4.8
	4		Shy, f-m.g., m.h., m.gr.			LOSS Ø
			bkn 6.1-6.4 becoming			UNACC Ø DED 4.8
	5		ve shy 6.1-7.2.		Box 2	Pull #2
	6					
						START 21:20
490.1	7				7.2	END 21:50
			CLS/SLS			TIME 30 min
	8					DRL 30 min
			Interbdd, dk.gr. S-m.h			RAN 9.9
	9				Box 3	REC 9.9
			: VE SHY TO 7.9			LOSS Ø
	10					UNACC Ø
	11				11.0	
	12					
	13				Box 4	
483.9						
483.3	14		SANDSTONE			
			Shy, f.g., m.h., ha, irr		14.7	DED 14.7
	15		0, JT. 13.4-13.6			Pull #3
			CLS/SLS			START 22:00
	16		Interbdd, dk.gr, S-m.h		Box 5	END 22:40
	17		Sa (v.f.g) 20.0-21.1			TIME 40 min
	18					DRL 40 min
						RAN 9.8
					18.5	REC 9.8
	19				Box 6	LOSS Ø
	20				(Con't)	UNACC Ø (CON'T)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE.
MAR 71

PROJECT Gallipolis Lock & Dam   HOLE NO. M-41/1

PROJECT GALLipolis Lock & DAm	INSTALLATION ORH-LD		SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS/SLS		Box 6	PULL#3 (CONT)
476.2	21					
	22		ICL		22.2	
	23		br.gr. -R.br. S-m.h.			
	24		w/slk 2.1 L.C bTwN		Box 7	
	25		27.8 & 35.1			DEP 24.5
	26				25.6	PULL#4 START 22:50
	27				Box 8	END 23:50 TIME 60min
	28				27.8	DRL 60min RAN 3.2 REC 3.2
	29					DEP 27.7 LOSS ∅ UNACC ∅
	30				Box 9	PULL#5 START 8:40
	31				31.6	END 9:09 TIME 29min DRL 29min
	32					RAN 7.4 REC 5.3
	33				Box 10	LOSS 2.1
	34					UNACC 2.1
462.2	35		Bottom HoLE		35.1	DEP 35.1
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1960 OF-629-563

PROJECT GALLipolis Lock & DAm	HOLE NO. M-41/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO M-41 STA 3+23A

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) M-41/2

5. NAME OF DRILLER DAVE HARPER

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 497.1

8. DEPTH DRILLED INTO ROCK 33.2

9. TOTAL DEPTH OF HOLE 463.9

10. SIZE AND TYPE OF BIT 4⁵/₁₆"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/8/89 COMPLETED 2/8/89

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 33.2

19. SIGNATURE OF INSPECTOR IMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SLS			Pull #1
	1		Chy., m-dk.gr. s-mh.			START 9:55
			bkn, shy 0.0-1.2;			END 8:15
	2		grading		1	TIME 20 min
						DRL 20 min
494.1	3					RAN —
			SANDSTONE		3.6	REC 4.9
492.9	4		Shy, f-m.g, m.h, m.gr			LOSS ∅
			CLS			UNACC ∅
	5					DEDS.0 T.DEP 4.5
	6		Shy. occ, shy, s-mh.		2	Pull #2
						START 8:30
	7		m.-dk.gr shy 4.2-5.0;		7.2	END 8:42
						TIME 12 min
	8		Shy.pt gs w/tr.gr.			DRL 12 min LOSS ∅
						RAN — UNACC ∅
	9		cl. coa & se 7.5-12.7			REC 3.6 T.DEP 8.5
	10		w/o.a Lc		3	DEP 9.5
						Pull #3
	11				10.9	START 6:55
						END 7:35
	12					TIME 40 min
484.4						DRL 40 min
	13		SANDSTONE		4	RAN —
			F.g., m.h. m.gr. CLS lens			REC 7.0
	14		13.9-14.5 w/ang (45°)			LOSS 0.4
			contact @ 13.9		14.5	UNACC 0.4
	15					
481.3						
	16		CLS		5	T.DEP 15.9
			s. m.h, dk.gr, shy			
	17					
			w/occ SLS Lenses;			
	18				18.3	DEP 18.4
			closely-m spaced		6	
	19		Hor. shy pt gs w/occ		(cont)	Pull #4
	20		(cont)			(cont)

PROJECT Gallipolis Lock & Dam	HOLE NO. M-41/2

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 497.1				Hole No. M-141/1	
PROJECT GALLIPOLIS LOCK & DAM			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		6	PULL #4
	21		TR. of gR.cL coa/FLd			
	22		SLS LEN 16.6 - 16.8		22.2	START 9:50 END 10:21
	23		R.bR 19.9 - 19.96 bLN		7	TIME 31 min DRL 31 min RAN —
	24		W/SLK 22.2 - 22.8			REC 8.9
472.3						LOSS 0 T/DEP 24.0 UNACC 0
	25		ICL		25.8	DEP 25.9
	26		R.bR, S.-m.h.			PULL #5
	27		O.SL.C. bTWN 29.8 & 33.2		8	START 10:43 END 11:22 TIME 39 min
	28					DRL 39 min
	29				29.5	RAN — REC 7.9
	30					LOSS 0.5
	31				9	UNACC 0.5
	32					
463.9	33		Bottom Hole		33.2	T/DEP 33.2
	34					DEP 33.9
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67	(ER 1110-1-1801)	GPO 1969 OF - 628-683	PROJECT GALLIPOLIS LOCK & DAM	HOLE NO. M-141/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET / OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam
10. SIZE AND TYPE OF BIT 4 X 5½ "

2. LOCATION (Coordinates or Station) MONO M-42 STA 2+93 A
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W.G. JAQUES
12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) M-42/1
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A | **DISTURBED** N/A | **UNDISTURBED** N/A

5. NAME OF DRILLER WAYNE TICE
14. TOTAL NUMBER CORE BOXES 9

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
15. ELEVATION GROUND WATER N/A
16. DATE HOLE STARTED 2/8/89 | COMPLETED 2/8/89

7. THICKNESS OF OVERBURDEN Ø 496.8
17. ELEVATION TOP OF HOLE 496.8

8. DEPTH DRILLED INTO ROCK 34.8
18. TOTAL CORE RECOVERY FOR BORING 34.8

9. TOTAL DEPTH OF HOLE 462.0
19. SIGNATURE OF INSPECTOR LMO

ELEVATION 496.8 a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE			
	1		sLy., f-m.g, m.h, m.gR			Pull #1
			SLS			START 10:30
	2		cLy, s:m.h, dkgR., PTs.sLy		Box 1	END 10:38
494.0			cLs LENS 2.0-2.3			TIME 8min
						DRL 8min
	3		SANDSTONE			RAN —
	4		sLy., f.-m.g., m.h, m.		3.7	REC 5.0
			gR bkN w/HR, 0.JT.			LOSS Ø
	5		5.0-5.8			UNACL Ø
491.0						DEP 5.0 T/DEP 4.9
	6				Box 2	Pull #2
			SLS			
	7		S.-m.h., m.-dkgR w/occ		7.2	START 10:45
						END 11:07
	8		cLs LEN cLs 7.9-8.9;			TIME 22min
	9		cLs 8.9-11.9 m.h 11.9		Box 3	DRL 22min
						RAN —
	10		w/ veRT, 0, JT. 11.9-12.2			REC 9.6
	11					LOSS Ø
					10.9	UNACL Ø
	12					
484.3						
	13		SANDSTONE		Box 4	
			sLy Pig, m.h., m.gR.			
	14					
482.2					14.6	
	15		SLS/cLS			DEP 14.9 T/DEP 14.6
	16		INtre b/d cLs-15.9-16.2		Box 5	Pull #3
			(R. 16.6-17.2) 30°			START 12:01
	17		smooth contact @ 16.2			END 12:35
			cLs-18.7-20.0			TIME 34min
	18		(R. 18.7-19.1)		18.2	DRL 34min
					Box 6	RAN —
	19					REC 9.5
	20		(Cont)		(Cont)	LOSS 0.6
						(Cont)

PROJECT GALLIPOLIS LOCK & DAM | HOLE NO. M-42/1

PROJECT						
GALLIPOLIS LOCK & DAM			INSTALLATION OBH-CD			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS./CLS		Box 6	Pull #3
	21				22.0	
475.3						UNACC 0.6
	22		CLS		Box 7	
			m.-dk.gr, s.-m.s w/slt			
	23		Ha ptgs			
472.8	24					
			JCL			DEP 29.9 T/DEP 29.7
	25					Pull #4
			R.br, s.-m.h, slk			
	26				26.0	START 12:50
			0.6 L.C. btwn 29.0 &			END 13:34
	27				Box 8	TIME 49min
	24.7.					DRL 49min
	28					RAN —
	29					REC 9.9
						LOSS 0
	30				29.7	UNACC 0
	31					
	32				Box 9	
	33					
	34					
462.0			Bottom Hole		34.8	DEP 34.8 T/DEP 34.6
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1966 OF - 628 - 603	PROJECT GALLIPOLIS LOCK & DAM	HOLE NO. M-42/1

DRILLING LOG	DIVISION ORD	INSTALLATION OEH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO M-42 STA 3423A

3. DRILLING AGENCY W. G. Jarues

4. HOLE NO. (As shown on drawing title and file number) M-42/2

5. NAME OF DRILLER David Harder

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.1

8. DEPTH DRILLED INTO ROCK 33.5

9. TOTAL DEPTH OF HOLE 463.6

10. SIZE AND TYPE OF BIT 4 V5.5'

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED NA — UNDISTURBED NA

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/8/89 COMPLETED 2/8/89

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 33.5

19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			CLS			Pull #1
	1		SA, shy, s.-m.h., m.-dk.gr.			START 12:15
			w/ss lam bkn 0.0-1.1		Box 1	END 12:21
494.7	2		w/0.8 Lc s. cl se @ 2.2			TIME 6min
						DRL 6min
	3		SANDSTONE			RAN —
			shy, f.g., m.h., m.gr		3.7	REC 3.8
493.0	4					LOSS 0.8
			CLS			UNACC 0.8 T/DEP 4.6
	5		s.-m.h, m.dk.gr. shy			DEP 5.0
	6		w/m closely spaced		Box 2	Pull #2
						START 12:35
	7		hor ptgs - To 9.1 0.2 L.C.			END 1250 UNACC 0.2
	8		btwn 4.6 & 9.1 occ shy		8.0	TIME 15min
						DRL 15min
	9		Len			RAN —
						REC 9.3
	10				Box 3	LOSS 0.2
						DEP 9.3 T/DEP 9.1
	11					Pull #3
					11.6	START 1:01
	12					END 1:42
484.6						TIME 41min
	13		SLS			DRL 41min
			SA, m.h., m.-dk.gr		Box 4	RAN —
	14					REC 9.0
			hr frac 13.0-13.3 grading			LOSS 0
	15		into		15.3	UNACC 0
481.5	16		CLS			
	17		m.-dk.gr, s-m.h., pts		Box 5	
			shy w/occ shy lam			
			SA 12.4-17.7 m-closely			
	18		spaced hor ptgs w/			T/DEP 18.1
			occ tr. or gr. cl coa		18.5	DEP 18.9
	19		l/ld started @ 17.7		Box 6	Pull #4
	20		(cont)		(cont)	(cont)

PROJECT GALLIPOLIS Lock & DAM			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS (cont)		Box 6	Pull #4
	21					START 1:52
475.3						END 2:25
	22		ICL		22.6	TIME 33min
						DRL 33min
	23		br.gr - R.br., s.m.h,			RAN —
						REC 9.8
	24		SLK TRANS 21.8-24.0		Box 7	LOSS ∅
	25		Becoming R.br. @24.0			UNACC ∅
	26				26.3	
	27					
	28				Box 8	DEP 27.7 / DEP 27.9
	29				29.7	Pull #5
						START 2:40
	30					END 3:10
						TIME 30min
	31				Box 9	DRL 30min
	32					RAN —
						REC 6.0
	33				33.5	LOSS ∅
463.6			Bottom Hole			UNACC ∅
	34					T/DEP + DEP 33.9
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) JUN 67   GPO 1980 OF - 628-663

| PROJECT GALLIPOLIS Lock & DAM | HOLE NO. M-42/2 |

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

10. SIZE AND TYPE OF BIT 4 x 5.5

2. LOCATION (Coordinates or Station) MONO M-43 STA 3+33 A

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W.G. JAQUES CO.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) M-43/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 2-8-89 COMPLETED 2-8-89

7. THICKNESS OF OVERBURDEN Ø 496.7

17. ELEVATION TOP OF HOLE 496.7

8. DEPTH DRILLED INTO ROCK 33.1

18. TOTAL CORE RECOVERY FOR BORING 33.1

9. TOTAL DEPTH OF HOLE 463.6

19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			CLS			PULL #1
	1		Shy. S.-m.h, m.-dk.gr			START 1405
			Icl. 2.1 - 3.2 (soft)			END 1415
	2				Box 1	TIME 10 MIN.
						DRL 10 MIN.
493.5	3					RAN —
						REC 5.0
	4		SANDSTONE		3,7	LOSS 0
			Sly., f.g., m.h., m.gr.			UNACC. 0
	5		thn. bd. jn c. sm. - 5.0-5.5			DEP 5.0 T/DEP 5.0
			grading 5.0 - 6.0		Box 2	PULL #2
490.7	6					START —
			CLS			END 1630
	7				7.4	TIME —
			S.-m h., m.-dk. gr.,			DRL —
	8		dk. r. br. 12.2 - 12.6			RAN —
			Good contact			REC 10.2
	9				Box 3	LOSS —
						UNACC. —
	10					
	11					
					11.2	
	12					
484.1					Box 4	
	13		SANDSTONE			
			V. sly. f.g. m.h. m.gr.			
	14		Concial S. jt. 13.7-14.4			
482.2						
	15		CLS		15.1	DEP 15.2
			Occ. sly. m.-dk gr		Box 5	
	16		S.-m.h., sl. 53. 17.8-18.3			
	17		m. spaced			T/DEP 17.2
			P+gs throughout sb. ang.			
	18		slk. +g 17.5 - 17.8			
					18.5	PULL #3
	19				Box 6	
	20		(CONT.)		(CONT)	(CONT.)

PROJECT GALLIPOLIS Lock & Dam   HOLE NO. M-43/1

						SHEET 2 OF 2 SHEETS
PROJECT GALLIPOLIS LOCK & DAM				**INSTALLATION** ORH-CD		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CLS (CONT.)		Box 6	PULL # 3
475.4	21					START 1645
						END 1730
			CLS / ICL			TIME 45 MIN
	22		gr., s.-m.h., slk.			DRL 45 MIN
474.2					22.3	RAN —
						REC 9.4
	23		ICL			LOSS 0.3
			s.-m.h., r. br. slk.		Box 7	UNACC 0.3
	24		0.3 L.C. btwn 22.5 + 24.9			T/DEP 24.0
	25		0.2 L.C. btwn 24.9 + 29.4			DEP 24.9
	26				26.0	PULL # 4
						START 1740
						END 1815
	27					TIME 35
					Box 8	DRL 35
	28					RAN —
						REC 4.3
						LOSS 0
	29					UNACC 0
					29.5	DEP 29.4
	30					T/DEP 29.8
					Box 9	PULL #5
	31					START 1830
						END 1900
						TIME 30 M.
	32					DRL 30 MIN
						RAN —
						REC 4.7
463.6	33		BOTTOM HOLE		33.1	LOSS —
						UNACC —
	34					DEP 34.1
	35					T/DEP 34.5

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET / OF / SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT a "/5.5"
2. LOCATION (Coordinates or Station) Mond M-43 STA 3+65A	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W. G. Jaques	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

4. HOLE NO. (As shown on drawing title and file number) M-43/2	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER STEVE FRY	14. TOTAL NUMBER CORE BOXES 9
	15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	16. DATE HOLE	STARTED 2/8/89	COMPLETED 2/8/89

7. THICKNESS OF OVERBURDEN Ø 497.6	17. ELEVATION TOP OF HOLE 497.6
8. DEPTH DRILLED INTO ROCK 33.7	18. TOTAL CORE RECOVERY FOR BORING 33.7 %
9. TOTAL DEPTH OF HOLE 463.9	19. SIGNATURE OF INSPECTOR LMJ

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.6			CLS			Pull #1
	1		Shy, s.-m.h., m-dk.gr.			START 4:37
					Box 1	END 4:55
	2					TIME 18min
494.9						DRL 18min
	3		SANDSTONE			RAN --
			Shy, f.g., m.h., m.gr.		3.6	REC 4.7
	4		IRR VERT, hLd FRAC 2.7.3.2			LOSS Ø
492.9			O. IRRA JT 3.3 - 4.7			UNACC Ø T/DEP 4.7
	5		CLS/SLS			DEP 5.0
			INTERBED, m-dk.gr		Box 2	Pull #2
	6		w/ occ. hvy, dk.gr.cL			START 5:00
			SE. 0.5 L.C. 4.7-9.0			END 5:15
	7		ICL LEN 9.0-9.4 mostly		7.1	TIME 15min
			CLS Lshy w/s.cL			DRL 15min
	8		LENS below 9.4			RAN --
					Box 3	REC 4.2
	9					LOSS 0.5
						UNACC 0.5 DEP 9.4
	10					T/DEP 8.6
						Pull #3
	11				11.8	START 5:23
						END 5:36
	12					TIME 7min
						DRL 7min
	13				Box 4	RAN --
484.4						REC 5.0
	14		SANDSTONE			LOSS Ø
			Shy, f.g., m.h., m.gr			UNACC Ø T/DEP 12.4
482.8			bkn 13.2 -13.3: grading		14.7	DEP 14.5
	15		@ 14.0-14.8 into			Pull #4
			CLS/SLS			START 5:45
	16		INterbeld, m-dk.gr,		Box 5	END 6:00
			s-m.h, m-closely spaced			TIME 15min
	17		PTgs occ SLK occ. TR.			DRL 15min
			gr. cL, coo/fLd.			RAN --
	18				18.2	REC 3.8
					Box 6	LOSS 1.0
	19		SL-20 18.4.-18.8			UNACC 1.0
					(CONT)	T/DEP 19.2
	20					DEP 19.2
						DRL #5 (CONT)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam	HOLE NO. M-43/2

| PROJECT Gallipolis Lock & Dam | INSTALLATION ORH-CD | | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	PULL#5 START 6:12
477.0						END 6:29
	21		ICL			TIME 12 min
	22		R. br, S. - m. h., v.E. bkn		22.0 Box 7	DRL 12 min RAN — REC 4.3
	23		SLR 1.0 L.C btwn			LOSS 1.0
						UNACC 1.6
	24		20.6 & 24.5			T/DEP + DEP 24.5
						PULL #6
	25					
						START 6:45
	26				26.4 Box 8	END 7:07 TIME 22 min
	27					DRL 22 min
						RAN —
	28					REC 4.7
						LOSS 0
	29					UNACC 0 T/DEP 29.2
						DEP 29.6
	30				30.0	PULL #7
					Box 9	START 7:20
	31					END 7:40
	32					TIME 20 min DRL 20 min
						RAN —
	33					REC 5.4
463.9			Bottom Hole		33.7	LOSS 0
	34					UNACC 0
						DEP 34.5
	35					T/DEP 34.6
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

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DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4 x 5½"
2. LOCATION (Coordinates or Station) MONO L-1 STA 12+14.23 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) L-1/1	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE	14. TOTAL NUMBER CORE BOXES 10
	15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	16. DATE HOLE	STARTED 12/22/88	COMPLETED 12/22/88

7. THICKNESS OF OVERBURDEN Ø 496.9	17. ELEVATION TOP OF HOLE 496.9
8. DEPTH DRILLED INTO ROCK 34.7	18. TOTAL CORE RECOVERY FOR BORING 32.9 %
9. TOTAL DEPTH OF HOLE 462.2	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9						Pull #1
	1		SAND STONE			START 7:58
						END 8:12
	2		LT GR - GR, H TO M.H		1	TIME 19 min
						DRL 19 min
	3		M - C.g., OCC. mic.			RAN 4.8
					3.8	REC 4.8
	4		FE SURFACE STAINED			LOSS Ø
						UNACC Ø
						DEP 4.8 T/DEP 4.7
	5		496.9 - 496.8, Sh, STR		2	Pull #2 START 8:23
	6		487.4 - 487.3, Ck pln			END 8:30 TIME 17 min
	7		486.4., Sh. Frag 486.2 -		7.4	DRL 17 min UNACC Ø RAN 3.6
	8		485.8			REC 3.6 LOSS Ø
						T/DEP + DEP 8.9
	9				3	Pull #3 START 8:41
	10					END 8:49 TIME 8 min
	11				14.1	DRL 8 min RAN 4.9
	12					REC 5.0 LOSS 0.1
	13				4	UNACC 0.1
483.8						DEP 13.3 T/DEP 13.4
	14		SLT	14.5		Pull #4
	15		GR - GN. GR., S - M.H			START 8:55 END 9:10
	16		SR, bkn pln, SS. bdn		5	TIME 15 min DRL 15 min
	17		GR. F.g., M.H, w/occ			RAN 6.2 REC 6.2
	18		Pyrite nodules 477.1		18.1	LOSS Ø UNACC Ø
	19		476.9		6	
	20		(Cont)		CONT	T/DEP + DEP 19.6 Pull #5

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam	HOLE NO. L-1/1

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE	4969		Hole No.	L-1/1
PROJECT GALLiPoLis LocKé DAM		INSTALLATION OEH-CD			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
976.7	20					
	21		SAND STONE		6	PULL #5
	22		ge - H.ge., m.H, F-mge			START 9:29
					21.7	END 9:91
	23		occ. mici,			TIME 17 min
	24					DRL 17 min
			-Pyrite bdd pln. 466.5		7	RAN 10.0
	25					REC 10.0
			466.1, 465.9			LOSS 0
					25.4	UNACC 0
	26		CaL cemented noriual			
	27		465.0 - 464.8		8	
	28		CL BNPLN 4750			
	29				28.9	
	30				DEP 29.7 T/DEP29.4	
	31				9	PULL #6 START 7:56 END 10:08
	32					TIME 12 min
					32.5	DRL 12 min
	33				10	RAN 5.0 REC 5.1 LOSS 0 UNACC 0
	34					
462.2			BOTTOM HOLE		39.7	DEP 39.7
	35					T/DED 39.8
	26					
	27					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67   (ER 1110-1-1801)   GPO 1900 OF - 628 - 603

| PROJECT GALLipoLis LocK+DAm | HOLE NO. L-1/1 |

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4 X 5½"

2. LOCATION (Coordinates or Station) MONO L-1 STA 11+74.60 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. G. JAGUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) L-1/2	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE	14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A

	16. DATE HOLE	STARTED 12/22/88	COMPLETED 12/22/88

7. THICKNESS OF OVERBURDEN Ø 496.8	17. ELEVATION TOP OF HOLE 496.8

8. DEPTH DRILLED INTO ROCK 34.2	18. TOTAL CORE RECOVERY FOR BORING 34.2

9. TOTAL DEPTH OF HOLE 462.6	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8						Pull #1
	1		SAND STONE			START 10:38
						END 10.42
	2		LT GR TO GR M.-H.H.		1	TIME 4 min
						DRL 4 min
	3		M.-C. GR, TH, SH 0.1			RAN 4.8
					3.8	REC 4.8
	4		SP 492.4 TO 489.0			LOSS Ø
						UNACC Ø
	5		High Ang FRAC 488.6-			DEP 50 T/DEP 4.7
					Z	Pull #2
	6		487.8, GR TO DK GR M.H.			START 10.47
						END 11.02
	7		M. GR, BELOW 487.2		7.3	TIME 15 min LOSS Ø
						DRL 15 min UNACC Ø
	8		SH, STRINGERS 485.8-			RAN 3.8
						REC 3.8
	9		485.7		3	T/DEP +DEP 8.6
						Pull #3
	10					START 11:08
					10.6	END 11:14
	11					TIME 16 min
						DRL 16 min
	12				4	RAN 5.0
484.0						REC 5.0
	13		SLT			LOSS Ø
			GR.-GN. GR S.-M.H.			UNACC Ø
	14				19.0	T/DEP +DEP 13.6
			SR, SS GR, F GR. M.H.			Pull #4
	15					START 11:21
			483.6-486.4 CL 477.9		5	END 11:35
	16					TIME 19 min
			SS. BKN 483.8-483.9			DRL 19 min
	17					RAN 5.8
			DK GR. F. VF GR. M.H			REC 5.8
	18				17.6	LOSS Ø
			480.8-480.7		6	UNACC Ø
477.6	19					DED 19.3
			SANDSTONE			Pull #5 T/DEP 19.4
	20		CONT		CONT	

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock + Dam	HOLE NO. L-1/2

PROJECT GALLIPOLIS LOCKS' DAM   **INSTALLATION** OPH-CD   SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20				6	PULL #5
	21		SANDSTONE		21.2	START 12:25
	22		LT.ge.-gr, M.H, F-m.ge			END 12:45
						TIME 20 min
	23		mic, sm, pyrite ned.		7	DRL 20 min
						RAN 9.8
	24		+ FLAKS 475.2 - 473.2			REC 9.8
						LOSS ∅
	25		CAL CEMENTED LEN		29.8	UNACC ∅
	26		465.0 - 968.9, 970.3 · 470.8		8	
	27		nod. 465.1 - 465.0			
	28		VE. F. gr, SLT 475.3 · 4750			
	29				28.5	
						DEP 29.3 T/DCP 29.2
	30				9	PULL #6
						START 12:55
	31					END 1:08
	32				32.0	TIME 13 min
						DRL 13 min
	33				10	RAN 5.0
						REC 5.0
4626	34		BOTTOM HOLE		34.2	LOSS ∅
						UNACC ∅
						DEP 34.3 T/DCP 34.2
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1960 OF - 628 - 603   PROJECT GALLIPOLIS LOCK & DAM   HOLE NO. L-1/2
APR 67

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DRILLING LOG	DIVISION OPD		INSTALLATION ORH-CD			Hole No. L-211 SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO L-2 STA 11+82,19 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-211

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.6

8. DEPTH DRILLED INTO ROCK 34.3

9. TOTAL DEPTH OF HOLE 462.3

10. SIZE AND TYPE OF BIT 4 X 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/27/88 COMPLETED 12/27/88

17. ELEVATION TOP OF HOLE 496.6

18. TOTAL CORE RECOVERY FOR BORING 34.3 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6			SANDSTONE			PULL #1
	1					START 12:30
			LT. gr TO gr M.-H.H.		1	END 12:41
	2					TIME 11min
			F. - C.gr. occ. mic.			DRL 11min
	3				3.1	RAN 4.9
			Mech bkn 496.6-996.4			REC 5.0
	4					LOSS Ø
			Cal. cem. 995.4-991.2,			UNACC Ø
	5				2	DEP + T/D EP 4.9
			483.8 - 483.3			PULL #2
	6					
			NUM Sh Bd PLN. oc			START 13:01
	7				7.2	END 13:20
			FRAG. 990.2- 489.9, 486.5-			TIME 19min
	8					DRL 19min
			486.9, 4861-9860, 485.5-			RAN 9.7
	9				3	REC 9.5
			485.4 High. ang. Frac. 484.9			LOSS Ø
	10					UNACC Ø
			484.3 , C-mgr 493.7-485.9		11.0	
	11					
			F-mgr ELSEWhere			
	12				4	
483.3	13					
	14		SLT			
			gn.-gr, S - m.H, Sh		14.5	DEP 19.6 T/D EP 19.9
	15		CL seam 483.3 - 483.2			PULL #3
			BKN 480.8 -480.7		5	START 13:40
	16					END 14:01
479.6						TIME 21min
	17		SANDSTONE			DRL 21min
			LT gr - gr, m.H-HH, m.Fgr.			RAN 9.9
	18				18.1	REC 9.8
			occ. mic.,		6	LOSS Ø
	19					UNACC Ø
	20		occ Thin St 3d 477.9-477.0		(CONT)	(CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT GALLIPOLIS LOCK + DAM **HOLE NO.** L-211

PROJECT GALLIPOLIS LOCK + DAM			INSTALLATION OPH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	Pull #3
	21					
			OCC PYRITE, NOD 977.0		21.7	
	22					
			976.2, CAL CEM 976.3			
	23					
			976.0, 970.5 - 969.8,		7	
	24					
			CL/SH Bd PLN THIN			T/DEP + DEP 24.5
	25				25.1	Pull #4
			w/ PYR FLAKES 979.2-977.0			
	26					START 19.15
			MECH SPIN 972.3 972.0		8	END 19.29
	27					TIME 19 min
			CAL NOd, S. OCC 465.9-			DRL 4 min
	28					PAN 9.9
			464.9		28.8	REC 10.0
	29					LOSS 0
			Th. SH Bd 463.7		9	UNACC 0
	30					
	31					
	32					
					32.4	
	33				10	
462.3	34		Bottom Hole		34.3	DEP 39.4 T/DEP 39.3
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67	(ER 1110-1-1801)	GPO 1960 OF - 628 - 603	PROJECT GALLIPOLIS LOCK + DAM	HOLE NO. L-211

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-LD		SHEET 1 OF 2 SHEETS

1. PROJECT 6allipolis Lock + Dam	10. SIZE AND TYPE OF BIT 4 x 5½"
2. LOCATION (Coordinates or Station) MONO L-2 STA 11+46.89 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) L-2/2	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE	14. TOTAL NUMBER CORE BOXES 10
6. DIRECTION OF HOLE	15. ELEVATION GROUND WATER N/A

☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	16. DATE HOLE	STARTED 12/22/88	COMPLETED 12/23/88

7. THICKNESS OF OVERBURDEN Ø 496.6	17. ELEVATION TOP OF HOLE 496.6
8. DEPTH DRILLED INTO ROCK 33.8	18. TOTAL CORE RECOVERY FOR BORING 33.8 %
9. TOTAL DEPTH OF HOLE 463.1	19. SIGNATURE OF INSPECTOR JMN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6			SANDSTONE			Pull #1
	1		LT-gr. m.-H. F to mgr			START 1:35
			occ mic., TH, Sh/cl Bd			END 1:93
	2		Pln 496.5, 495.3, 995.2		1	TimE 8 min
			499.9 HNg 20°, C.gr			DRL 8 min
	3		493.3 - 988.9			RAN 4.9
			Sh Bd w/0.2 spacing		3.5	REC 9.5
	4		491.9 - 988.6, w/mi, mic.			LOSS Ø
			bd.pln. (BANds), 988.9			UNACC Ø
	5		- 988.3, 987.7-987.2		2	DEP 5.0 T/DEP 4.9
			occ S. FALT (THRUST)			START 1:57 Pull #2
	6		dip And Fold (45°)			END 2:03
			< 0.1 displacement		6.7	TimE 8 min
	7		488.2 - 987.2			DRL 8 min
			SLT LENS w/LT COL			RAN 2.9 T/DEP 7.6
	8		Rock FRAgs 487.0-486.7			REC 2.9 DEP 7.8
					3	Pull #3
	9					LOSS Ø
						UNACC Ø
	10					START 2:10
					10.2	END 2:30 LOSS Ø
	11					TimE 20 min UNACC Ø
						DRL 20 min
	12				4	RAN 4.7
						REC 4.7 T/DEP 12.3
	13					DEP 12.5
483.2					13.6	Pull #4
	14		SLT			START 2:47
	15		gr.-gngr., S-m.H.			END 3:05
			sq, sli BKN, 483.2-982.8		5	TimE 18 min
	16		w/ss Lens @ 982.9-9828			DRL 18 min
			ss gr, m.H, f-mgr,			RAN 7.2
	17		482.0-9815, 9789-9789			REC 7.3
			sli bkn 478.2 977.9		17.3	LOSS Ø
	18				6	UNACC Ø
477.7	19		SANDSTONE			
	20		CONT		CONT	DEP 19.9 T/DEP 19.7

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT 6allipolis Lock+Dam	HOLE NO. L-2/2

| PROJECT GALLiPOLiS LOCK + DAM | INSTALLATION O R H - CD | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20				6	
			SANDSTONE		20.8	PULL #5
	21					
			LT. gr - gr, M.H, F. - m.gr.			START 7:49
	22				7	END 8:09
			OCC. miC. X Bd, pve nod			TiME 20 min
	23					DRL 20 min
			AND FLAKES 476.2 - 473.6			PAN 10.0
	24					REC 10.0
			Sh SCAM 475.5 - 475.4		24.5	LOSS 0
	25					UNACC 0
			CAL CCAi LenS 473.3 -		8	
	26					
			473.4, num.S. Sh. FrAg.			
	27					
			+ Bd PLN 470.2 - 470.0			PULL #6
	28				28.3	
			num miC bd plN CHor			START 8:23
	29					END 8:28
			BANdS) 466.0 - 465.5			TiME 5 min
	30				9	DRL 5 min DEP 30.0
						RAN 4.0
	31					REC 4.0
						LOSS 0
	32				31.8	UNACC 0
	33				10	
463.1			BOTTOM HOLE		33.8	DEP + T/DEP 33.8
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

| ENG FORM 1836-A JUN 67 | (ER 1110-1-1801) | GPO 1980 OF - 628 - 603 | PROJECT GALLipolis LockLDAM | HOLE NO. L-2/2 |

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DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam	10. SIZE AND TYPE OF BIT 4 X 5½"
2. LOCATION (Coordinates or Station) MONO L-3 STA 11+54.98 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W. G. Jaques	12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 Mobile
4. HOLE NO. (As shown on drawing title and file number) L-3/1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER D. Norris	14. TOTAL NUMBER CORE BOXES 10
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE STARTED 12/27/88 COMPLETED 12/27/88
7. THICKNESS OF OVERBURDEN Ø 496.8	17. ELEVATION TOP OF HOLE 496.8
8. DEPTH DRILLED INTO ROCK 33.5	18. TOTAL CORE RECOVERY FOR BORING 33.5
9. TOTAL DEPTH OF HOLE 463.3	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			SANDSTONE			Pull #1
	1		LT gr. - gr, m.H. -H, mi-			START 15:01
			c.gr., occ. mic, Bkn plns			END 15:12
	2		w/o, 0.2 496.8 -495.8		1	Time 11 min
			mi.gr. mic 496.8 -499.1			DPL 11 min
	3		488.5 -487.7 /c. - m.gr.			PAN 5.0
			499.1 -488.5, Th. Sh. Bd		3.7	REC 4.8
	4		491.9 -491.3 Sh. Frag.			LOSS Ø
			489.6 -489.1			UNACC Ø
	5					DEP + T/DEP 5.0
	6				2	Pull #2
						START 16:00
	7					END 16:22
					7.2	Time 22 min
	8					DPL 22 min
						PAN 6.9
487.7	9				3	REC 6.9
			ICL			LOSS Ø
	10		P. br, S, mottled w/gr-gn			UNACC Ø
			cl. L. Pl 20°30° 4879-487.3			
	11		Slt 90° @ contact w/slt			
485.9			poss Fault		11.0	
	12		SLT			DEP + T/DEP 11.7
			gr - gn.gr., S-mi.H, sa			Pull #3
	13		bkn @ contact w/icl		4	START 16:45
			Slt 485.9 -485.3, mech			END 17:20
	14		chipped 485.1 -484.7			Time 35 min
			bkn 480.2 -480.1, w/Th cl,		14.5	DPL 35 min
	15		cont @ 480.1			PAN 10.1
						REC 10.1
	16				5	LOSS Ø
480.1						UNACC Ø
	17					
	18		SANDSTONE		18.3	
	19		LT.gr. -gr, mi.H F-m.gr		6 (CONT)	
	20		(CONT)			(cont)

PROJECT Gallipolis Lock+Dam	HOLE NO. L-3/1

PROJECT GALLIPOLIS LOCK+DAM	INSTALLATION ORH-CD						SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	20		SANDSTONE				
	21		OCC. mic., SLT #80.1-975.5				
	22		SLT SEAM bKN 479.5-		21.8	DEP+T/DEP 21.8	
						PULL #9	
	23		479.3, OCC Th Sh bd				
	24		477.3-976.8, OCC S.pyr			START 18:10	
						END 18:55	
	25		Nod. 975.0-979.0		25.5	TIME 45min	
						DRL 45min	
	26		CAL. CEM. 965.0-964.3			PAN 9.8	
						REC 9.3	
	27					LOSS Ø	
						UNACC Ø	
	28						
	29				29.2		
	30						
	31						
	32				31.8	DEP+T/DEP 31.6	
						PULL #5	
	33					START 21:00	
463.3			Bottom HOLE		33.5	END 21:11	DEP+ T/DEP 33.3
	34					TIME 11min	
						DRL 11min	
	35					PAN 1.2	
	36					REC 1.2	
						LOSS Ø	
	37					UNACC Ø	
	38						
	39						
	40						
	41						
	42						
	43						
	44						

ENG FORM 1836-A (ER 1110-1-1801) GPO 1980 OF-628-603   PROJECT GALLIPOLIS LOCK+DAM   HOLE NO. L-311

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO L-3 STA 11+19.18 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-3/2

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 497.0

8. DEPTH DRILLED INTO ROCK 33.9

9. TOTAL DEPTH OF HOLE 463.1

10. SIZE AND TYPE OF BIT 4YSV2

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/23/88 COMPLETED 12/23/88

17. ELEVATION TOP OF HOLE 497.0

18. TOTAL CORE RECOVERY FOR BORING 33.9

19. SIGNATURE OF INSPECTOR JMU

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE			Pull #1
	1		Lt.gr. -gr, m-MH, F.-C.gr.			START 9:00
			occ mic, num sm. sh. bd		1	END 9:13
	2		+ Frag 496.0 - 495.3,			TIME 13 min
			492.7 - 492.5, 491.6 - 491.3			DRL 13 min
	3		489.5 - 489.3, Sh scam w/			RAN 4.9
			Cl coating oucat under		3.5	REC 4.9
	4		492.0 -492.1			LOSS ∅
			CAL. CEM. 489.9-489.7			UNACC ∅
	5				Z	DEP 5.0 T/DEP 4.9
	6					Pull #2
	7				7.1	START 9:26 END 9:57
	8					TIME 31 min DRL 31 min
488.3	9		SLT		3	RAN 9.6 REC 9.9
	10		gr. -gn.gr. S.-M.H.			LOSS ∅
			gradational w/sh			UNACC ∅
	11		@ top to sa at bottom		10.6	
			Few breaks 1.0 spacing			
	12		mech spin 487.3 no Lc		4	
			SS. Lt.gr, m.H, m.gr,			
	13		481.0 - 980.2			
	14				14.2	
	15				5	DEP 14.8 T/DEP 19.6
						Pull #3
	16					START 10:??
	17					END 10:26 TIME 21 min
	18				17.8	DRL 21 min
478.8					6	RAN 10.3
	19		SANDSTONE		CONT	REC 9.9
	20		(CONT)			LOSS ∅ (CONT)

PROJECT GALLIPOLIS LOCK & DAM	INSTALLATION ORH-CD	SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			, PULL #3
	21				6	UNACC Ø
	22		LTGR-GR, M.H, F-MGR.			
	23		mic.			
			SLT GR, M.H. Sa 477.5-		23.6	
	24		476.9, PYR NOD S MINAL		7	
	25				25.3	DEP 24.8
			SCATTERED ALSO FLAKS 476.1			DEP 24.9
	26		-472.9, SLT VC.F. GR 475.5		8	PULL #4
	27		-474.9, CAL CEM 468.4 -			START 10.47
	28		468.3.			END 11.05
						TIME 18 MIN
	29				28.9	DRL 18 MIN
						PAN 7.0
	30				9	REC 7.0
	31					LOSS Ø
						UNACC Ø
	32				32.6	
	33				10	
463.1	34		BOTTOM HOLE		33.9	DEP+T/DEP 33.9
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1990 OF - 625-603 | PROJECT GALLIPOLIS LOCK & DAM | HOLE NO. L-3/2

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DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET / OF 2 SHEETS

1. PROJECT GALLiPOLiS LOCK + DAM

10. SIZE AND TYPE OF BIT 4 x 5½"

2. LOCATION (Coordinates or Station) MONO L-9   STA 11+26.76 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) L-9/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A   UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE

14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/28/88   COMPLETED 12/28/88

7. THICKNESS OF OVERBURDEN Ø 496.9

17. ELEVATION TOP OF HOLE 496.9

8. DEPTH DRILLED INTO ROCK 34.8

18. TOTAL CORE RECOVERY FOR BORING 34.8

9. TOTAL DEPTH OF HOLE 462.1

19. SIGNATURE OF INSPECTOR IMO

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE			PULL #1
	1		LT gr.-gr., m.H-H, m-cgr.		1	START 8:00
			occ. mic., Bln 496.6-996.5			END 8:10
	2		sm cl FRAg 493.7, cgr.			TIME 10 min
			4940-987.5, mgr. Above			DRL 10 min T/DEP DED 2.4
	3		+ Below, cl seam, 487.9		3.4	RAN 2.9
			-487.8, 487.7-987.6			REC 2.9 PULL #2
	4		FeSTAiN, F.gr. SS. 487.8-			LOSS Ø START 8:29
			487.7, Thin cl COATed			UNACC Ø END 8:40
	5		PLN 987.5		2	TIME 11 min
						DRL 11 min
	6					RAN 5.0
						REC 5.0
	7				7.2	LOSS Ø
						UNACC Ø
	8					DEP+T/DEP 7.4
					3	PULL #3
	9					START 8:50
						END 9:00
	10					TIME 10 min
486.4					10.6	DRL 10 min
485.7	11		CL			RAN 6.5
			LT gr, S. Sl, slk			REC 7.5
	12		Low Angle 486.2, High			LOSS Ø
			Angle 486.3-485.8		4	UNACC Ø
	13					
			SLT			
	14		gr-gn.gr. S-m.H, gradation		14.3	
			w/sh @ Top To sa BoTTom			DEP+T/DEP 14.9
	15		sa Below 478.1			PULL #4
			SS. gr, m.H, f. mgr., Sl		5	
	16		480.5-479.8, SS gr. m-H.			START 15:35
			m.gr 478.0-477.9		16.6	END 16:45
	17					TIME 10 min
	18				6	DRL 10 min
						RAN 9.7
	19					REC 9.7
						LOSS Ø
	20		(CONT)		20.0	(CONT)

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLT			Pull #4
	21					
475.3					7	UNACC ∅
	22		SANDSTONE			
	23		LT.gr.-gr, m.H, F-M.gr			
	24		mic, gradational contact			
	25		w/ up SLT, SLT f.gr	29.6		T/DEP 29.6
	26		ABOVE 473.8, cl coated			DEP 29.8
	27		Bd pln, occ pyr nod sm.		8	Pull #5
	28		474.2-472.8, cal.cem.	28.4		START 16:58
	29		472.8-472.7, few thin			END 17:22 TIME 29 min
	30		sh. Bd. 468.0-467.9		9	DRL 29 min RAN 9.7 REC 10.2
	31		bands of mic bddlns.			LOSS ∅
	32		463.1	34.6		UNACC ∅
	33				10	
	34					
462.1	35		BOTTOM HOLE	34.8		DEP 34.6
	36					T/DEP 34.8
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1980 OF - 628-003   PROJECT Gallipolis Lock+Dam   HOLE NO. L-4/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

10. SIZE AND TYPE OF BIT 4 Y5 ½

2. LOCATION (Coordinates or Station) MONO L-9 STA 10+87.71 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W. G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) L-9/2

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE

14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 12/23/88 COMPLETED 12/23/88

7. THICKNESS OF OVERBURDEN Ø 497.0

17. ELEVATION TOP OF HOLE 497.0

8. DEPTH DRILLED INTO ROCK 34.1

18. TOTAL CORE RECOVERY FOR BORING 34.1

9. TOTAL DEPTH OF HOLE 462.9

19. SIGNATURE OF INSPECTOR JMN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE			PULL #1
	1		LT. GR.-GR, M.H.-H. M.-			START 11:35
	2		C. GR., OCC. MIC., FC		1	END 11:53
			SURFACE STAIN 497.0			TIME 18 min
			496.9 ANG JT 45°			DRL 18 min
	3		496.7 - 496.5, NUM			RAN 5.0
			THIN SH/CL bd 492.1-		3.5	REC 5.0
	4		491.7			LOSS Ø
						UNACC Ø
	5				2	DEP+T/DEP 5.0
	6					PULL #2
						START 12:34
	7					END 12:52
					7.0	TIME 18 min
	8					DRL 18 min
						RAN 9.6
488.2	9		SLT		3	REC 9.1
	10		GR.-GN. GR. S-M.H. GRADATIONAL			LOSS Ø
			W/LT TOP TO SA BOTTOM			UNACC Ø
	11		OCC SH ANG PN 45° W/SH			
			SLT BTN 487.9-487.2, 486.6-486.x		10.8	
	12		hor ~10° 486.2, OCC MOTTLED			
			W/LT. BE CL 487.5-486.4			
	13		ANG PN, SH/bd BTN 30° 485.1-		4	
			485.0, ANG PN 30° 484.7-			
	14		484.6, SA below 484.3			
					14.2	T/DEP 19.0
	15					DEP 19.6
481.6						PULL #3
	16		SANDSTONE		5	START 1:08
			LT. GR., M.H. F. GR.			END 1:30
	17					TIME 22 min
						DRL 22 min
479.2						RAN 9.4
	18		SLT		18.0	REC 10.0
			GR., M.H. SA (SS. GR. M.H.		6	LOSS Ø
	19		M. GR 479.0 - 478.8)			UNACC Ø
477.2	20		SANDSTONE		(CONT)	(CONT)

| PROJECT GALLIPOLIS LOCK+DAM | | INSTALLATION ORH-CD | | | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	Pull #3
	21					
	22		LT. gr.-gr, N.H. F. mgr		21.7	
	23		occ mic, Slt, gr, m.H sa,		7	
	24		475.6 - 474.4, 473.8 - 473.2			DeP + TIDEP 24.0
	25		High Ang Frac 479.3 · 977.0		25.2	Pull #4
	26		few chey lsh bd + Frngs			START 2:10
	27		471.5 - 470.7, 469.6 - 469.4		8	END 2:21 TIME 11 min DRL 11 min
	28		467.7, 467.4 + 466.6, 463.8			RAN 10.0 REC 10.0
	29		CAL. Nod, 470.8 · 470.7		28.7	LOSS Ø UNACC Ø
	30		466.6 - 466.5			
	31				9	
	32		·		32.3	
	33				10	
462.9	34		Bottom Hole		34.1	DEP 34.0
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43		·			
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 4" 5.5"
2. LOCATION (Coordinates or Station) MONO L-5 / STA 10+80 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W. G. Jaques	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) L-51	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER David Harper /Steve Fry	14. TOTAL NUMBER CORE BOXES 11
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE — STARTED 1/10/89 — COMPLETED 1/10/89
7. THICKNESS OF OVERBURDEN ⌀ 496.5	17. ELEVATION TOP OF HOLE 496.5
8. DEPTH DRILLED INTO ROCK 38.9	18. TOTAL CORE RECOVERY FOR BORING 38.9 %
9. TOTAL DEPTH OF HOLE 457.6	19. SIGNATURE OF INSPECTOR J M/O

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5			SANDSTONE			PULL #1 START 1:20 END 1:35 TIME 15min DRL 15min RAN 2.9 REC 2.8 LOSS 0.1 UNACC 0
	1		M-C.g., m.h, m.gr.		Box 1	
	2		0.1 LC btwn 0.0;			
	3		2.9 LEA Lt.gr. 3.4-4.4		3.4	DEP 2.9 PULL #2 START 1:45 END 2:00 TIME 15min DRL 15min RAN 7.4 REC 7.4 LOSS 0 UNACC 0
	4				Boy 2	
	5					
	6					
489.9					7.1	DEP 7.4
	7		SANDSTONE			PULL #3 START 2:10 END 2:22 TIME 12min DRL 12min RAN 12.0 REC 4.7 LOSS 0 UNACC 0
	8		SLV, Fig., m.h.,		Box 3.	
	9		M. gr bkn. 7.3-7.4			
	10		OVER CORED 7.4-8.0		10.6	
	11					
	12				Box 4	DEP 12.1 PULL #4
	13				13.8	START 2:35 END 2:53 TIME 18min DRL 18min RAN 20.4 REC 8.3 LOSS 0 UNACC 0
	14					
	15				Box 5.	
	16					
479.4	17				17.3	
	18		SLS		Box 6	
	19		SA. m.h., m.-dk.gr OCC. SS. Lens: 0.2. CLS			
	20		(CONT)		(CONT)	(CONT)

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE.
MAR 71
(TRANSLUCENT)

PROJECT Gallipolis Lock & Dam	HOLE NO. L-511

PROJECT GALLIPOLIS Lock & DAM				INSTALLATION OPH-CD			SHEET 2 OF 2 SHEETS	
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d		% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	
	20		SLS (cont'd)			Sock 20.4	DEP 22.0	
	21		LENS @ 20.6-20.8				Pull #5	
	22		gRAding moRE SA			Box 7	START 3:05	
			w/depth				END 3:25	
	23						TIME 20 min	
							DRL 20 min	
472.5	24					24.0	RAN 30.5	
	25		SANDSTONE				REC 10.1	
							LOSS θ	
	26		SLY, Fig., m.h., w/			Box 8	UNACC θ	
	27		dk. gR. SLY LAM: occ					
	28		PTg ALong SLy LAM			27.7		
	29							
	30					Box 9		
	31					31.4	DEP 30.5	
							Pull #6	
	32						START 15:40	
	33					Box 10	END 16:27	
							TIME 47 min	
	34						DRL 47 min	
	35					35.1	RAN 40.6	
							REC 9.9	
	36					Box 11.	LOSS 0.2	
	37						UNACC θ	
	38							
457.6	39		Bottom Hole			38.9	DEP 38.9	
	40							
	41							
	42							
	43							
	44							

DRILLING LOG	DIVISION ORD		INSTALLATION OPH-CD		SHEET 2 OF 3 SHEETS

1. PROJECT Gallipolis Lock + Dam
10. SIZE AND TYPE OF BIT < Y5 ½"

2. LOCATION (Coordinates or Station) MONO L-5 STA 10+67.90 B
11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W.G. JAQUES
12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

4. HOLE NO. (As shown on drawing title and file number) L-5/2
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER WAYNE TICE
14. TOTAL NUMBER CORE BOXES 14

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
15. ELEVATION GROUND WATER N/A
16. DATE HOLE STARTED 12/27/88 | COMPLETED

7. THICKNESS OF OVERBURDEN Ø 497.0
17. ELEVATION TOP OF HOLE 497.0

8. DEPTH DRILLED INTO ROCK 49.1
18. TOTAL CORE RECOVERY FOR BORING 49.1

9. TOTAL DEPTH OF HOLE 447.9
19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE			PULL #1
	1		LT. gr-gr, M. H,-N, F-C gr,			START 7:33
	2		mic, SURFACE Fe STAINED		1	END 7:49
						TIME 16 min
	3		497.0-496.9, BROKEN PW.			DRL 16 min
	4				3.5	RAN 5.0
			W/0.3 SPACING 497.0-495.0			REC 4.8
	5					LOSS Ø
			cal. cem. 490.5-490.0			UNACC Ø T/DEP 4.8
	6				2	DEP 5.0
						PULL #2
	7				7.0	START 8:02
						END 8:34
	8					TIME 36 min
488.6						DRL 33 min
	9		SLT		3	RAN 8.1
			gr-gn.gr., S, gradational			REC 7.9
	10		w/cl @ top to sh bottom			LOSS 0.2
			cl, gr, S, 488.6-487.3, sev. bk.			UNACC 0.2
	11		w/poss. 0.2 loss 487.6-487.5		10.5	
485.4						
	12		SANDSTONE		4	
	13		LT gr. -gr-M.H, V.c.f.-mgr,			
			Sl., sh 482.6-482.5, few sh			DEP+T/DEP 12.9
	14		Bd+Frag 482.5-482.3, F.m.,		14.1	PULL #3
			gr. 482.4-481.9 F-V.c.f.			START 8:49
	15		SS.			END 9:13
	16				5	TIME 24 min
						DRL 24 min
	17					RAN 9.7
479.4						REC 9.5
	18		SLT gn.gr, S, sh, SS. gr, m.H.		17.8	LOSS Ø
			m. n gr. 478.7-478.5 SA Below		6	UNACC Ø
477.9	19		478.2			
			SANDSTONE		CONT	
	20		gr. M H, F-V.c.f gr SL. (cont)			(CONT)

PROJECT Gallipolis Lock + Dam | HOLE NO. L-5/2

PROJECT GALLiPOLiS LOCK + DAM			INSTALLATION OPH-CD			SHEET 2 OF 3 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #3
	21		Sh,, Low Angl. 10° 475.9 - 475.8			
475.5					21.5	
	22		SLT			T/DEP 22.4
			9R. S - MH, Sh, mech bkn		7	DEP 22.6
	23		474.6 - 474.5			PULL #4
473.4					24.9	
	24					START 9:42
	25		SANDSTONE			END 9:52
			LT. 9R. -9R, M.H., F-M.9R,			TIME 10 min
	26				8	DPL 10 min
			mic, occ small pyr			RAN 7.1
	27					REC 7.0
			bd 472.9 - 472.7, Small			LOSS ∅
	28		CAl. NOD. (PATch) 471.7			UNACC ∅
	29		- 471.6, 470.4 - 470.2,		28.6	
	30		OCC Thin sh Bd 468.8 -			DEP 29.5 T/DEP 29.9
	31		468.4, 463.9 - 462.9.		9	PULL #5
						START 10:00
	32		Small CAl. Nod. 463.7			END 10:27
	33		Num, mic bd. PIN.		32.1	TIME 27 min
						DPL 27 min
	34		(Bands) 460.6 - 460.4		10	RAN 9.9
	35		457.2, Few, occ, sh+li			REC 10.0
						LOSS ∅
	36		Sh Bd 461.1 - 460.8		35.9	UNACC ∅
	37		mech chipping 457.7		11	
	38		457.6			
	39					
					39.4	DEP 39.3
	40					PULL #6 T/DEP 39.4
	41				12	START 10:45
						END 11:09
	42					TIME 24 min
						DPL 24 min
	43				43.0	RAN 10.1
					13 CONT	REC 9.7
	44		(CONT)			(CONT)

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ELEVATION TOP OF HOLE		
4970	Hole No. L-5/2	

PROJECT	INSTALLATION	SHEET 3
GALLipolis Lock & DAm	OPH-CD	OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	44		SANDSTONE			PuLL#6
	45			.	13	LOSS Ø
						unACC Ø
	46					
	47				46.8	
	48				14	
447.9	49		Bottom Hole		49.1	T/DEP49.1
						DEP 49.5
	50					
	51					
	52					
	53					
	54					
	55					
	56					
	57					

ENG FORM 1836-A (ER 1110-1-1801)
JUN 67   GPO 1980 OF - 629 - 603

PROJECT	HOLE NO.
GALLipolis Lock & DAm	L-5/2

DRILLING LOG	DIVISION ORH	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO L-6 STA 10+98 B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-611

5. NAME OF DRILLER A. TICE

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN O 496.0

8. DEPTH DRILLED INTO ROCK 40.0

9. TOTAL DEPTH OF HOLE 456.0

10. SIZE AND TYPE OF BIT 4 15.5 IN.

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/11/89 | COMPLETED 1/11/89

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 40.0 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8						PULL #1
	1		SANDSTONE		Box 1	START 2:14 END 2:28 TIME 14 min DRL 14 min RAN 3.5 REC 3.5 LOSS 0
	2		SLY, M.-C.g., m.h,			
	3		M.gr. bkn. (mech)		3.5	UNACC 0 DEP 3.5
	4		4.0 - 5.6 w/ 0.5 LC		Box 2	PULL #2 START 2.40 END 2.51 TIME 11. min DRL 11 min RAN 8.4 REC 4.4 LOSS 0.5
	5		Tight Contact			
	6					
	7				7.0	UNACC 0
	8				Box 3	DEP 8.4
	9					PULL #3 START 3:06 END 3:20 TIME 14 min DRL 14 min RAN 15.9 REC 7.4 LOSS 0.4
	10				10.9	
	11					
	12				Box 4	UNACC 0
	13					
	14					
482.5					14.7	
	15		SANDSTONE			DEP 15.9 PULL #4
	16		SLY, Fig., m.h, m.gr.		Box 5	
	17		w/SLS. lam. & zos 0.1 LC (mech) btwn			START 15:40 END 16.05
	18		8.4 & 15.9		18.3	TIME 25 min
	19		S.-m.h, bkn. cls zos. @ 19.7 - 19.9		Box 6	DRL 25 min RAN 25
476.9	20					(CONT)

PROJECT GALLIPOLIS LOCK & DAM	HOLE NO. L-611

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 496.8   **Hole No.** L-6/1

PROJECT GALLIPOLIS Locks + DAM   **INSTALLATION** ORH-CD   SHEET 2   OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	PuLL #4
	21		S., shy., m-dk.gr.			REC 9.1
			v bKN. 20.6-22.0			LOSS 0
474.8	22					UNACC 0
					22.0	
	23					
					Box 7	
	24		SANDSTONE			
	25		F.-m.g. m.h. m-gr			DEP 25
					25.6	PuLL #5
	26					
	27				Box 8	START 16:20
						END 16:27
	28					TIME 7 min
						DRL 7 min
	29					RAN 34.9
					29.2	REC 9.9
	30					LOSS 0
						UNACC 0
	31				Box 9	
	32					
	33				33.0	
	34					
					Box 10	
	35					DEP 34.6
						PuLL #6
	36					START 16:53
					36.6	END 17:00
	37					TIME 7 min
						DRL 7 min
	38				Box 11	RAN 40.
						REC 5.1
	39					LOSS 0
456.8	40		BOTTOM HOLE		40.0	UNACC 0
						DEP 40.0
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

SPO: 1968 OF-329-263

PROJECT GALLIPOLIS LOCK + DAM   HOLE NO. L-6/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO L-6 STA 10+10 B

3. DRILLING AGENCY W G JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-6/2

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø   497.1

8. DEPTH DRILLED INTO ROCK 41.7

9. TOTAL DEPTH OF HOLE 455.4

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 12

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/10/89 COMPLETED 1/10/89

17. ELEVATION TOP OF HOLE 497.1

18. TOTAL CORE RECOVERY FOR BORING 41.7 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.1			SANDSTONE			Pull #1
	1					START 10:05
			LT.ge-gr m-HH, m-Cgr		1	END 10:17
	2					TIME 12 min
			FE SURFACE STAIN 0.0-0.1			DRL 12 min
	3					RAN 5.0
			Cl coated PN 6.0, 6.4		3.7	REC 4.9
	4					LOSS 0.1
			Sh bd 8.2-8.3, CAL, CEM			UNACC 0.1
	5					
			9.9-10.3, sh Bd 9.1, 9.3		2	DEPT/DEP 5.6
	6					Pull #2
			2.9			
	7				7.3	START 10:21
						END 10:44
	8					TIME 23 min
					3	DRL 23 min
	9					RAN 10.1
						REC 10.1
486.8	10					LOSS Ø
			SLT		10.9	UNACC Ø
	11		GR-GN.gr. S-M.H.			
	12		GRADATIONAL w/ Cl AT TOP		4	
	13		To SA AT BOTTOM, se BK 10.9			
	14		-11.2, LOW ANG PN 20°		14.6	
	15		w/ slk 11.9-12.0			T/DEPt DEP 15.1
481.6						Pull #3
	16		SANDSTONE		5	START 11:10
	17					END 11.23
			LT gr-gr, M.H.-HH,			TIME 13 min
	18				18.2	DRL 13 min
			F.-m gr., occ mic.		6 (CONT)	RAN 9.7
	19					REC 9.7
	20		(CONT)			LOSS Ø (CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT GALLIPOLIS Lock+Dam   HOLE NO. L-6/2

PROJECT Gallipolis Lock + Dam			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS
ELEVATION a	**DEPTH** b	**LEGEND** c	**CLASSIFICATION OF MATERIALS** (Description) d	**% CORE RECOV-ERY** e	**BOX OR SAMPLE NO.** f	**REMARKS** (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #3
	21		GRADATIONAL CONTACT			UNACC ∅
	22		w/ upper SLT, CAL. CEM.		21.9	
	23		16.8-17.1, 21.5-22.9			
	24		24.8-28.0, 35.2-36.8		7	
	25		F. gr ABOVE 20.0,			T/DEP + DEP 24.8
	26				25.5	PULL #4
	27		Few occ. SMALL + THIN		8	START 12:31 END 12:46 TIME 15MIN
	28		Sh Bd Below 21.5			DEL 15MIN PAN 9.7
	29		CAL, CEM. NOD 29.9		29.0	REC 9.7 LOSS ∅
	30		29.5, 30.1			UNACC ∅
	31				9	
	32					
	33				32.8	
	34					
	35				10	T/DEP + DEP 34.7 PULL #5
	36				36.2	START 13:00 END 13:35 TIME 35MIN
	37					
	38				11	DEL 35MIN PAN 7.0
	39					REC 7.0 LOSS ∅
	40				39.8	UNACC ∅
	41				12.	
455.4	42		BOTTOM HOLE		41.7	T/DEP + DEP 41.7
	43					
	44					

| PROJECT Gallipolis Lock + Dam | HOLE NO. L-6/2 |

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK AND DAM

2. LOCATION (Coordinates or Station) MOND L-7 STA 10+00 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-7/1

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 497.0

8. DEPTH DRILLED INTO ROCK 38.2

9. TOTAL DEPTH OF HOLE 458.8

10. SIZE AND TYPE OF BIT 4 X 5.5 IN

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL R-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN N/A — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1-11-89 COMPLETED 1-11-89

17. ELEVATION TOP OF HOLE 497.0

18. TOTAL CORE RECOVERY FOR BORING 38.2 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION (a)	DEPTH (b)	LEGEND (c)	CLASSIFICATION OF MATERIALS (Description) (d)	% CORE RECOVERY (e)	BOX OR SAMPLE NO. (f)	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) (g)
497.0			SANDSTONE. m-c.g., m.h., m.gr. To 5.8 m. SPACED, IRR PTgs ALong thin, mic. SLY, LAM.' 0.7 LC (mech) bTwn 0.0 + 3.0 : 0.3 CLS @ 5.5 - 5.8 : 5. CLS ±0. @ 18.8 - 19.3 w/Hvy. S, gr cL. Flcl.		Box 1	Pull #1 START 9:15 End 9:30 TIME 15min DRL 15min RAN 3.0 REC 2.8 LOSS .2 UNACC Ø DEP 3.0
	3				3.6	Pull #2 START 9:40 END 9:50 TIME 10 min DRL 10 min RAN 7.0 REC 4.0 LOSS Ø UNACC Ø
					Box 2	
491.2	6		SANDSTONE SLY, Fig. m.h., m.gr. w/ thin, dk.gr. sLY mic. LAM		7.0	DEP 7.0 Pull #3 START 10:00 END 10:11 TIME 11min DRL 11min RAN 11.1 REC 4.1 LOSS Ø UNACC Ø
					Box 3	
					10.6	DEP 11.1
					Box 4	Pull # 4 START 10:23 END 10:55 TIME 32 min DRL 32 min RAN 19.5 REC 8.4 LOSS Ø UNACC Ø
	14				14.0	
					Box 5	
					17.7	
					Box 6	
	20		(CONT)		(CONT)	DEP - 19.5 Pull #5 (CONT)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   (TRANSLUCENT)

PROJECT GALLIPOLIS LOCK+DAM   HOLE NO. L-7/1

| PROJECT GALLIPOLIS LOCK + DAM | | | | INSTALLATION ORH-CD | | | OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20				Box 6	PULL #5
	21		SANDSTONE		21.0	START 11:08 END 11:47
	22		Sly, Fig m.h., m.gr.		Box 7	TIME 39min DRL 39min
	23		w/ thin, dk.gr. sly			RAN 25.6 REC 6.1
	24		mic Lam			LOSS 0
	25				24.8	UNACC 0
	26				Box 8	DEP 25.6
	27					PULL #6
	28				28.3	START 12:35 END 13:15
	29					TIME 40min DRL 40min
	30				Box 9	RAN 35.3 REC 9.7
	31					LOSS 0
	32				32.0	UNACC 0
463.9	33		Cls /ss		Box 10	
	34		INTER bdd'			
461.9	35				35.3	DEP 35.3
	36		SANDSTONE Sly, Fig. m.h., m.gr w. thin shy Lam.		Box 11	PULL #7 START 13:30 UNACC 0 END 13:47 TIME 17min DRL 17min RAN 38.2 REC 2.2 LOSS .7
	37					
458.8	38				38.2	DEP 38.2
	39					
	40					
	41					
	42					
	43					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

Hole No. **L-7/2**

1. PROJECT GALLIPOLIS LOCK + DAm	10. SIZE AND TYPE OF BIT 4 x 5½
2. LOCATION (Coordinates or Station) MONO L-7 9+54 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B.57 MOBILE
4. HOLE NO. (As shown on drawing title and file number) L-7/2	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER WAYNE TICE / D. NORRIS	14. TOTAL NUMBER CORE BOXES 11
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE — STARTED 1/10/89 — COMPLETED 1/10/89
7. THICKNESS OF OVERBURDEN Ø 496.9	17. ELEVATION TOP OF HOLE 496.9
8. DEPTH DRILLED INTO ROCK 38.9	18. TOTAL CORE RECOVERY FOR BORING 38.9
9. TOTAL DEPTH OF HOLE 458.0	19. SIGNATURE OF INSPECTOR IMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE			PULL #1
	1		gR., m.H. m.-c.gR, occ			START 13:56
	2		mic., BKN @ SURFACE		1	END 14:12
						TIME 16 min
	3		0.0-0.4, sh scAm 3.5-3.7			DRL 16 min
						RAN —
					3.5	REC 5.0
	4		7.1-7.2, 7.5-7.6, sm cL			LOSS Ø
						UNACC Ø
	5		wod 7.0		2	DEP 50
	6					PULL #2
	7					START 14:15
					7.1	END 14:31
	8					TIME 16 min
						DRL 16 min
487.9	9		CL		3	RAN 9.5
			gR., VE.s.-s, cLAyey 9.0-9.4			REC 9.5
	10		sLT below 9.4, ANg conTAcT			LOSS Ø
486.9			w/uppER SS.			UNACC Ø
	11		SLS		11.0	
			gR, s-m.H., occ gRAdATionAL			
	12					
			InTER bdd w/vERy f.gR.		4	
	13					
			SS., SS. F.g. gR m.H. 11.7			
	14					
			.3.0		14.5	T/DEP + DEP 14.5
	15					PULL #3
480.8	16				5	START 14:40
			SANDSTONE.			END 14.55
	17					TIME 15 min
			LT gN-gR. m.-H, F-m.gR			DRL 15 min
	18				14.5	RAN 10.0
			mic, sh scAm 18.6-18.7		6.	REC 10.0
	19					LOSS Ø
			CAL.CEm., 19.2-21.9, 23.8-24		(ConT)	UNACC Ø
	20		(ConT)			(ConT)

ENG FORM 1836 MAR 71 — PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT GALLIPOLIS LOCK+DAm	HOLE NO. L-7/2

						SHEET 2 OF 2 SHEETS
PROJECT GALLIPOLIS LOCK & DAM				INSTALLATION ORH CD		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	Pull #3
	21		29.9 - 31.3, ANG. FRAC. 45°			
	22		21.9 - 22.2, BKN 23.2 - 23.9		21.9	
	23		HigH ANG. FRAC. 23.8 - 24.8		7	
	24		occ sm thin sh Bd. 22.6-28.1			T/DEP & DEP 24.5
	25		31.2		25.4	Pull #4
	26					START 15:10
	27				8	END 15:27 TIME 17min DRL 17min
	28					RAN 11.1 REC 10.2
	29				29.1	LOSS 0.9 UNREC 0.9
	30					
	31				9	
	32					
463.6	33				32.9	Pull #5 START 15:50
	34		SH3			END 16:00 TIME 10min
	35		gr, s-H., SH, SS, seam LTgr. m.gr, cal., sm pyr. nod.		10	DRL 10min RAN 3.3
461.3	36		SANDSTONE LTgr, H, m gr cal, conglomate 36.3-36.5 num sh frag			REC 3.3 LOSS 0
460.4	37		ICL		37.3	UNREC 0
	38		L.Br, S, mottd w/gr below 37.5, ANG plw, 30° w/slk 38.0 - 38.2		11	
458.0	39		BOTTOM HOLE		38.7	T/DEP DEP 38.7
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORHCD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM	10. SIZE AND TYPE OF BIT 4 X 5½
2. LOCATION (Coordinates or Station) MONO L-8 STA 9+99 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) L-8/1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRY	14. TOTAL NUMBER CORE BOXES 11
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE — STARTED 1/10/89 — COMPLETED 1/10/89
7. THICKNESS OF OVERBURDEN Ø 497.1	17. ELEVATION TOP OF HOLE 497.1
8. DEPTH DRILLED INTO ROCK 38.2	18. TOTAL CORE RECOVERY FOR BORING 38.2 %
9. TOTAL DEPTH OF HOLE 458.9	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
497.1			SANDSTONE			PULL #1
	1		LT.GR-GR, H.-M.H., M-C.GR.			START 17.48
	2				1	END 17.66
			OCC.MIC., BKN PN 0.2 SPACE			TIME 18 MIN
	3					DRL 18 MIN
			0.0-1.0, SM. SH. BD/FRAG		3.5	PAN —
	4					REC 9.1
			4.2-4.4, 7.5, BKN PN 0.3			LOSS 0.4
	5				2	UNACC 0.4
			SPACED 7.3-10.3, CAL			
	6					
			CEM 13.3-14.2, CL, GR,			
	7				7.3	
			S. 14.2-14.3			
	8					
	9				3	
						DEP 9.6 T/DEP 9.4
	10					PULL #2
	11				11.0	START 18.25
						END 18.55
	12					TIME 30 MIN
					4	DRL 30 MIN
	13					PAN —
						REC 9.5
482.9	14					LOSS Ø
			SLS		14.5	UNACC Ø
	15		GR. M.H S0.			
481.6						
	16		SANDSTONE			
			LT.GR-GR, M.H. F-M.GR.		5	
	17					
			MIC, V.E.F.GR (SLT) ABOVE			
	18				18.1	
			22.5, HIGH ANG/FRAC 16.0		6	T/DEP 18.9
	19				CONT.	
			16.7, CLAY SEAM 18.6, 0.05			
	20		(CONT)			

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT GALLIPOLIS LOCK + DAM	HOLE NO. L-8/1

							SHEET 2
PROJECT GALLIPOLIS LOCK+DAM			INSTALLATION ORH-CD				OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV. ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	20		SANDSTONE		6	DEP 20.4
	21		Thick., Cal, cem. 26.9-27.7,		21.4	Pull #3
	22		32.8-37.6, Thinck. Bd. 28.2			START 19:00
	23		Num. S. Sls. Frag. 34.6-		7	END 19.45 / Time 45 min / DRL 45 min / RAN ←
	24		34.8			REC 10.1
	25				25.0	Loss 0.1
	26					UNACC 0.1
	27				8	
	28					
	29				28.6	DEP 29.3 T/DEP 29.1
	30				9	Pull #4
	31					START 19:55
	32				32.2	END 20:45 / TIME 50 min / DRL 50 min
	33					RAN —
	34				10	REC 8.7 / Loss 0.4 / UNACC 0.4
462.0	35					
	36		SLS / Gr., s., Shy, Interbdd w/cls / cl 36.2-36.8, clseams		36.0	
	37		0.05 Thick 36.9 37.0, 37.5,		11	
	37.6					
458.9	38		Bottom Hole		38.2	T/DENT DEP 38.2
	39					
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION OPH-CD	INSTALLATION OPH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO L-8   STA 9+00 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-8/2

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ᵦ 496.7

8. DEPTH DRILLED INTO ROCK 39.1

9. TOTAL DEPTH OF HOLE 457.6

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/10/89 COMPLETED 1/10/89

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING 38.6

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.6			SANDSTONE			PULL #1
	1					START 4:30
			LT.gr.-gr, MH-H, m-c.gr.		1	END 4:45
	2					TIME 15min
			OCC mic., BKN/PN w/spacing			DRL 15min
	3					RAN 4.8
			0.2, 0-2.1, CAL, CEM 4.3-		3.7	REC 4.7
	4		6.2			LOSS 0
						UNACC 0
	5					DEP 4.8 T/DEP 4.7
	6				2	PULL #2
						START 4:50
	7					END 5:15
					7.3	TIME 25min
	8					DRL 25min
488.8						RAN 5.0
	9		CLS		3	REC 10.3
487.5	10		GR, S, Sh, num FERR ves.,			LOSS —
						UNACC — T/DEP 9.8
	11		SLS		11.1	
			GR M-H, sa., F.gr. SS.			
	12		GR, M H. 12.6-13.3		4	
	13					
478.3	14				14.7	
	15		SANDSTONE			DEP 15.0
	16		LT gr.-gr, mi-H, F-m.gr		5	PULL #3
	17		mic, occ thin sh, bd			START 5:30
						END 5:50
			17.0-17.7, 20.0-20.9, 27.2			TIME 20min
	18				18.4	DRL 20min
			-27.3, sl slthy BKN 21.2-27.0		6	RAN —
	19					REC 9.9
	20		(CONT)		(CONT)	LOSS 0
						(CONT)

ELEVATION TOP OF HOLE						**496.7**		Hole No. **L-8/2**

PROJECT				INSTALLATION			SHEET 2
GALLiPOLiS LOCK+DAM				ORH - CD			OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE			PULL #3
	21				6	
			CAL. CEM. NOd. 23.8			UNACC Ø
	22				22.8	
			CAL CEM. 26.5-27.5			
	23					
			SHALE SEAM @ 30° ANg		7	
	24					DEP 23.8
			W/SLK 29.6-29.8			
	25					T/DEP 29.9
					25.6	PULL #4
	26					
						START 6:05
	27					END 6:40
					8	TIME 35min
	28					DRL 35min
						RAN 8.4
	29					REC 7.2
					29.3	LOSS 0.1
466.6	30					UNACC 0.1
	31		CLS			
			gR=dkgR., S, Sh, scucRy,		9	
			3EN w/o.iLoss 31.2-32.3			
464.5	32					T/DEP+DEP 32.2
	33		IcL		33.0	PULL #5
			R-bR, S: MoTTLed w/gR			START 7:10
	34					END 7:45
			+ gN. gR, Num. FRAC. w/			TIME 35min
	35					DRL 35min
			SLK, Si, Less R. bR +		10	RAN 6.9
	36					REC 6.4
			MORE gN. gR S-icw 36.4			LOSS Ø
	37					UNACC Ø
			Less SEN			
	38					
458.1			BoTTom HOLE		38.6	T/DEP 38.6
	39					DEP 39.1
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67 (ER 1110-1-1801) GPO 1980 OF - 828-603

PROJECT	HOLE NO.
GALLiPOLiS LOCK+DAM	L-8/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono L-9 STA 9+0% B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) L-9/1

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 497.0

8. DEPTH DRILLED INTO ROCK 37.9

9. TOTAL DEPTH OF HOLE 459.1

10. SIZE AND TYPE OF BIT 4" X 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/10/89 COMPLETED 1/10/89

17. ELEVATION TOP OF HOLE 497.0

18. TOTAL CORE RECOVERY FOR BORING 37.9 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE m-.c.g., M.H., M.gr.		Box 1	Pull #1 START 21:45 END 21:55 TIME 10 min DRL 10 min RAN 5.0 REC 5.0 LOSS 0 UNACC 0
					3.8	
	5				Box 2.	DCPS.0
491.4						Pull #2
	6		SANDSTONE			START 22:07 END 22:15 TIME 8 min DRL 8 min
	7		sly, fig, m.h., m.gr		7.5	RAN 10.0
	8		Interbdd w/ m.dk.		Box 3.	REC 5.0 LOSS 0 UNACC 0
	9		gr. Sls. CLS 8.5-9.0			
	10		Sls zon 11.8-14.3;			DEP 10.0 Pull #3
	11		Ve. bkn. 17.1-17.6		11.1	START 22:27 END 22:45 TIME 18 min
	12		CLS 17.1-18.8;		Box 4.	DRL 18 min RAN 14.8 REC 4.8 LOSS 0 UNACC 0
	13		grading more			
	14		sandy w/ depth			
					14.8	DEP 14.8
	15				Box 5	Pull #4
	16					START 22:55 END 23:15 TIME 20 min DRL 20 min RAN 24.6
	17					
	18					REC 9.8
					18.5	
	19				Box 6	LOSS 0 UNACC 0
	20		(Cont)		Cont	(CONT)

PROJECT Gallipolis Lock & Dam				INSTALLATION ORH-CD		SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21		SANDSTONE		Box 6	Pull #4
	22				22.1	
	23				Box 7	
	24					
					24.6	DEP 24.6
	25					Pull #5
	26				Box 8	START 7:18
						END 7:55
470.0	27					TIME 37 min
	28		CLS M.gr., S. m.h.		28.1	DRL 37 min RAN 34.1
						REC 9.5
467.9	29				Box 9	LOSS 0 UNACC 0
	30		ICL			
	31		R.br., bkn, slkn.			
	32				31.9	
	33				Box 10	
	34					DEP 34.1
	35				35.3	Pull #6 START 8:20 LOSS 0 END 8:40 TIME 20 min UNACC .2
	36				Box 11	DRL 20 min RAN 37.9
	37					REC 3.6
459.1	38		Bottom Hole		37.9	DEP 37.9
	39					
	40					
	41					
	42					
	43					
	44					
	45					

ENG FORM 1836-A
JUN 67

GPO: 1969 OF—329-243

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam	10. SIZE AND TYPE OF BIT 7 15/16
2. LOCATION (Coordinates or Station) MANO L-9 STA 8+65 B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile
4. HOLE NO. (As shown on drawing title and file number) L-9/2	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN / DISTURBED N/A / UNDISTURBED N/A
5. NAME OF DRILLER D. NORRIS	14. TOTAL NUMBER CORE BOXES 11
6. DIRECTION OF HOLE ☒VERTICAL ☐INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE STARTED 1/10/89 COMPLETED 1/11/89
7. THICKNESS OF OVERBURDEN 0 496.9	17. ELEVATION TOP OF HOLE 496.9
8. DEPTH DRILLED INTO ROCK 39.2	18. TOTAL CORE RECOVERY FOR BORING 39.2 %
9. TOTAL DEPTH OF HOLE	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE m.-c.g., m.h., m-g.r.		Box 1	PULL #1 START 20:45 END 21:00 TIME 15min DRL 15min RAN 4.9 REC 4.9 LOSS 0
493.1	3				3.8	UNACC 0
	4		SANDSTONE Sly, f,-m.g, m.h., m.gr		Box 2	DEP 4.9 PULL #2 START 21:05 END 21:25 TIME 20min
489.7	7				7.2	DRL 20min
	8		SLS Cly-SA., S. m.h., m.gr UE. bkn 7.4-8.2; 8.7 -11.0 grading into		Box 3	RAN 15.2 REC 10.3 LOSS 0 UNACC 0
	11				11.0	
	12 13				Box 4	
482.9	14				14.6	
	15		SANDSTONE Sly, f.g, m.h., m.gR w/ occ., m.-DK.gR. Sly. Lam & zos: 1" IRR. Cls Lam @ 17.0		Box 5	DEP 15.2 PULL #3 START 21:40 END 22:05 TIME 25min
	18				18.1	DRL 25min
	19				Box 6	RAN 24.9
	20		(CONT)		(CONT)	(CONT)

ELEVATION TOP OF HOLE						**496.9**	

Hole No. **L-9/2**

PROJECT **Gallipolis Lock + Dam**

INSTALLATION **ORH-CD**

SHEET **2** OF **2** SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		Box 6	Pull #3
	21					
	22				21.7	REC 9.7
						LOSS 0
	23				Box 7	UNACC 0
	24					
472.2						
	25		CLS		24.9	DEP 24.9
	26		occ. sty., s-m.h., m.gr			Pull #4
470.3			ve bkn 24.7-24.9 grading into		Box 8	START 22:25
	27					END 23:25
	28		ICL			TIME 60 min
						DRL 60 min
	29		R. br - greenish		28.6	RAN 33.5
						REC 8.8
	30		gr., s - m.h, slk.		Box 9	LOSS 0
	31					UNACC 0
	32					
	33				32.1	
	34				Box 10	DEP 33.7
	35					Pull #5
						1/11/91
	36				35.7	START 7:30
						END 7:54
	37				Box 11	TIME 24 min
						DRL 24 min
	38					RAN 39.2
						REC 5.5
	39					LOSS 0
457.7			Bottom Hole		39.2	UNACC 0
						DEP 39.2
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO: 1969 OF—329-263

PROJECT **Gallipolis Lock + Dam**

HOLE NO. **L-9/2**

1. PROJECT GALLIPOLIS LOCK + DAM	10. SIZE AND TYPE OF BIT 4" X 5.5"
2. LOCATION (Coordinates or Station) MONO L-10 STA 8+55B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) L-10/1	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER DAVID HARPER / STEVE FRY	14. TOTAL NUMBER CORE BOXES 11
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE — STARTED 1/12/88 — COMPLETED 1/12/88
7. THICKNESS OF OVERBURDEN Ø 497.0	17. ELEVATION TOP OF HOLE 497.0
8. DEPTH DRILLED INTO ROCK 38.3	18. TOTAL CORE RECOVERY FOR BORING 38.3 %
9. TOTAL DEPTH OF HOLE 448.7	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE			Pull #1
	1		m-c.g, m.h, m.gr		Box 1	START 1:55
						END 2:04
	2		BKN 0.0-2.7 ANg			TIME 9min
						DRL 9min
	3		Contact			RAN 5.0
						REC 5.0
	4				3.8	LOSS 0
						UNACC 0
	5				Box 2	DEPTH/DEP 5.0
						Pull #2
	6					START 2:15 UNACC 0
						END 2:21
	7				7.1	TIME 6min
						DRL 6min
488.8	8				Box 3	RAN —
488.3			CLS			REC 4.3
	9		S. m.h., m. -dkgr o.l s. gr			LOSS 0
			CL@ 8.2 : TR gr.cl. Filling@8.7			DEPTH/DEP 9.3
	10		SANDSTONE		10.3	Pull #3
	11		Shy m.h., m.gr, fig NEAR HOR PTg ALONG Shy stg @ 11.8 cls/sls		Box 4	START 2:30
	12		20 @ 13.2-13.8 w/Frac IN cls 13.3-13.5			END 3:04
483.9	13				13.8	TIME 34min
			SS/CLS			DRL 34min
	14		Interbdd cls-16.2-16.5; HOR. PTg ON BOTH sides			RAN —
	15		hor ptg @ 16.0 1"cls		Box 5	REC 9.1
	16		Len @ 17.0 (shy bkn) CLS - 17.4-17.7			LOSS 0
	17		CLS - 19.2-20.4 w/ Closely spaced Hor ptgs + TR .gr.cl. thin Lam		17.4	UNACC 0
	18		(PRob AREA OF 0.1Lc.) MECH PTg @ 21.7		Box 6	TDEP 18.4
	19					
	20		(CONT)		(cont)	DEP 19.9

				ELEVATION TOP OF HOLE					
				1970		Hole No. *L-10/1*			

PROJECT *Gallipolis Lock + Dam* **INSTALLATION** *OCH-CD* **SHEET** *2* OF *2* SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	20		*SS/CLS*		Box 6	
	21				20.8	*Pull #4*
	22				Box 7	*START 3:50*
						END 4:18
473.9	23					*TIME 28 min*
	24		*CLS*			*DRL 28 min*
			shy, shy, m.-dk.gр,js		23.6	*RAN 17.1*
	25		*-m.h pTg (mech) @ 23.1*		Box 8	*REC 13.5*
			23.7: 1" ss. Lam @ 24.1			*LOSS Ø*
	26		*shy. slk. 24.3, 25.9: 45°*			*UNACC Ø*
			slk pTg @ 26.6 26.8			
	27		*hor slk pTg @ 27.0.*			
			grading into			
468.8	28				27.9	
	29		*ICL*		Box 9	
	30		*R. br, slk; BKN,*			
	31		*S.-m.h. 0.5 L.C.*		31.5	
	32		*btwn 28.2 & 33.5*			
	33				Box 10	
	34					
	35					
					35.7	*DEP + T/DEP 35.5*
	36					*Pull #5*
						START 5:25
	37					*END 5:37*
						TIME 12 min
						DRL 12 min
						RAN 2.8
						REC 2.8
458.7	38		*BOTTOM HOLE*		38.3	*LOSS Ø T/DED 38.3*
						UNACC Ø
	39					*DEP 39.3*
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67   GPO: 1969 OF—329-242   **PROJECT** *Gallipolis Lock + Dam*   **HOLE NO.** *L-10/1*

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MRWD L-10 STA 8+05B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-10/2

5. NAME OF DRILLER A. TICE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ⊘ 496.1

8. DEPTH DRILLED INTO ROCK 38.0

9. TOTAL DEPTH OF HOLE 448.1

10. SIZE AND TYPE OF BIT 4 X 5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | STARTED 1-11-89 | COMPLETED 1-11-89

17. ELEVATION TOP OF HOLE 496.1

18. TOTAL CORE RECOVERY FOR BORING 38.0

19. SIGNATURE OF INSPECTOR TMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.1			SANDSTONE		Box 1	PULL #1
	1		SLY., M-C.g., m.h., O.2			START 8:20
			L.C. 0.0-0.5			END 8:30
	2		grading into			TIME 10 MIN
						DRL 10 MIN
	3					RAN 5.0
						REC 4.8
						LOSS .2
	4				3.8	UNACC ⊘
491.7					Box 2.	DEP 5.0
	5		SANDSTONE			
			SLY, fig., m.h., m.gr			PULL #2
	6					
	7					START 8:35
						END 9:12
					7.5	TIME 37.0 MIN
488.0	8					DRL 37.0 min
481.0			CLS			RAN 14.8
			gr. v.s. IRR CONTACT		Box 3.	REC 9.8
	9		CLS			LOSS ⊘
	10		SLY, s-m.h. bkn			UNACC ⊘
			10.2-10.6 & 11.2-11.4			
	11		bkn, ha, IRR FRAC			
			13.6-14.0		11.4	
	12				Box 4.	
	13					
	14					
481.3	15				14.8	DEP 14.8
			SANDSTONE			PULL #3
	16		SLY. fig., m.h., m.		Box 5.	
			gr. w/ thin sly,			START 9:25
	17		Lam & zos.			END 9:43
	18					TIME 18 min
						DRL 18 min
	19				18.5	RAN 24.7
					Box 6	
	20		(cont)		(cont)	(CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT GALLIPOLIS LOCKS & DAM | HOLE NO. L-10/2

PROJECT GALLIPOLIS Lock & DAM				INSTALLATION ORH-CD		SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		Box 6	PULL #3
	21					REC 9.9
						LOSS ø
	22					UNACC ø
473.8					22.3	LOSS OF DRILL
	23		CLS / SLS			WATER THROUGH
						FRAC TO SURFACE
	24		INTER bdd., S.-m.h.,		Box 7	30'-40' FROM HOLE
			m. gr v. bkn. 22.3-23.1;			
	25		SLK ANG. PT9 23.4-			DEP 24.7
			24.0			PULL #4
	26				26.0	START 10:10
						END 10:35
	27					TIME 25 MIN
					Box 8.	DRL 25 min
						RAN 30.0
	28					REC 5.3
284.0						LOSS ø
	29		ICL			UNACC ø
					29.7	DEP 30.0
	30		SLK., GREENISH-			PULL #5
			R. br s.-m.h.			
	31				Box 9	
						START 10:50
	32					END 11:08
						TIME 18 min
	33				33.1	DRL 18 min
						RAN 38.0
	34				Box 10	REC 8.0
	35					LOSS ø
						UNACC ø
	36				35.9	
	37				Box 11	
458.1	38		Bottom hole		38.0	DEP 38.0
	39					
	40					
	41					
	42					
	43					

ENG FORM 1836-A JUN 67 | GPO: 1969 OF—329-242 | PROJECT GALLIPOLIS Lock+Dam | HOLE NO. L-10/2

DRILLING LOG — DIVISION: ORD — INSTALLATION: ORH-CD — SHEET 1 OF 2 SHEETS

1. PROJECT: Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station): Mono L-11 STA 8+10 B

3. DRILLING AGENCY: W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number): L-11/1

5. NAME OF DRILLER: Steve Fry

6. DIRECTION OF HOLE: ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN: Ø 496.9

8. DEPTH DRILLED INTO ROCK: 37.0

9. TOTAL DEPTH OF HOLE: 459.9

10. SIZE AND TYPE OF BIT: 4" x 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL): A.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL: B-53

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES: 9

15. ELEVATION GROUND WATER: N/A

16. DATE HOLE: STARTED 1/12/89 COMPLETED 1/12/89

17. ELEVATION TOP OF HOLE: 496.9

18. TOTAL CORE RECOVERY FOR BORING: 37.0 %

19. SIGNATURE OF INSPECTOR: JMN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE		Box 1	Pull #1
	1					START 6:05
			M-C.g, m.h., m.gr.			END 6:10
	2					TIME 5min
			V.BK. 0.0-0.8 w/o.3 LC			DRL 5min
						RAN 4.9
	3		(mech) closely spaced			REC 4.3
						LOSS .3
	4		O. near hor. bdd plns		3.9	UNACC .3
	5		Throughout; 0.3		Box 2	Dep 4.9 — T/DEP 4.6 Pull #2 START 6:17 LOSS 0.3
	6		L.C. (mech) btn #6;			END 6:35 UNACC 0.3 TIME 18min
	7		8.3		7.5	DRL 18min RAN 3.8 REC 3.6
	8				Box 3	T/DEP 8.4 DEP 8.7
487.6	9					
487.2			CLS			Pull #3
	10		VE.S m. dk. gr.			
	11		SLS		11.1	START 6:48 END 7:21
	12		SA, m.-dk.gr., PTgs		Box 4	TIME 33min DRL 33min
	13		Shy O. contact			RAN 9.8 REC 10.2
482.6	14					LOSS Ø UNACC Ø
	15		SAND STONE		14.8	
	16		Shy., f'g., m.h., m.gr.		Box 5	
	17		w/ cls/sls lam. & lenses			
	18		SLS. zo 15.0 -15.4 ' VE.S.		18.5	DEP & T/DEP 18.5
	19		gR. Cl. 15.4 '15.5 ' SLS. bkn		Box 6	Pull #4
	20		(CONT)		CONT	(CONT)

ENG FORM 1836 MAR 71 — PREVIOUS EDITIONS ARE OBSOLETE. — (TRANSLUCENT)

PROJECT: Gallipolis Lock & Dam — HOLE NO. L-11/1

PROJECT GALLIPOLIS LOCK : DAM			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS	
ELEVATION a	**DEPTH** b	**LEGEND** c	**CLASSIFICATION OF MATERIALS** *(Description)* d	**% CORE RECOV- ERY** e	**BOX OR SAMPLE NO.** f	**REMARKS** *(Drilling time, water loss, depth of weathering, etc., if significant)* g	
	20		SANDSTONE		Box6	PULL #4	
	21		w/tr. gr. cl coa. prgs			START 7:35	
	22		16.6 - 17.0 : mech ptg @		22.3	END 8:25	
						TIME 50 min	
	23		17.2, 17.6, 18.0, 20.6, 21.2			DRL 50 min	
	24		V. bKN 22.8 - 27.8 w/		Box7	RAN 8.0	
						REC 5.2	
	25		4.1 L.C.			LOSS 4.1	
	26					UNACC 4.1	
	27					DEP + T/DEP 26.5	
469.1						PULL #5	
	28					START 9:25	
	29		ICL			END 10:12	
						TIME 47 min	
	30		R. bR., SLK, S. - m. h.		29.7	DRL 47 min	
						RAN 10.4	
	31		VC. S , BKN 27.8 - 37.0		Box 8	REC 6.9	
	32		w/ 2.3 L.C.			LOSS 2.3	
						UNACC 2.3	
	33				33.2		
	34				Box 9		
	35						
	36						
459.9	37		Bottom Hole		37.0	DEP + T/DEP 37.0	
	38						
	39						
	40						
	41						
	42						
	43						
	44						

ENG FORM 1836-A
JUN 67

GPO: 1949 OF—329-543

| PROJECT GALLIPOLIS Lock + Dam | HOLE NO. L-11-1 |

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO L-11 STA 7+64 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-11/2

5. NAME OF DRILLER DOWELL NORRIS

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 496.5

8. DEPTH DRILLED INTO ROCK 38.0

9. TOTAL DEPTH OF HOLE 458.5

10. SIZE AND TYPE OF BIT 4 V 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/12/89 | COMPLETED 1/13/89

17. ELEVATION TOP OF HOLE 496.5

18. TOTAL CORE RECOVERY FOR BORING 38.0 %

19. SIGNATURE OF INSPECTOR LMO

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5	1–6		SANDSTONE m.-Lg., m.h., m.gr bkn into sm sect (MAX 0.3) 0.0-1.8; S PTS @ 4.2		Box 1 3.8 Box 2	Pull #1 START 10:10 END 10:25 TIME 15min DRL 15min RAN 5.0 REC 5.0 LOSS ∅ UNACC ∅ DCP+T/DEP 5.0 Pull #2
489.6	7–13		CLS/ICL S. m.h., m.-dk.gr. Ve.S., BKN 6.9-7.5: grading Sly w/depth: HN, 0., IRR, JT 12.5-13.0 HOR. Shy pts. @ 13.4		7.5 Box 3 11.3 Box 4	START 10:30 END 11:10 TIME 40 min DRL 40 min RAN 7.9 REC 10.2 LOSS ∅ UNACC ∅ T/DEP 12.5
483.1	14–20		SS/CLS Shy: SS.fig, m.h., m.gr CLS s.m.h -m.dk.gR. CLS- 15.0-15.7 (BKN 15.0-15.3) PTS @ 15.7; 15.9 SLi. Ang PTS ALong Thin dk.gr. Shy.Lam @ 16.6, 17.0, 17.2 & 18.1 ; CLS incLs 18.5-19.3: CLS Lam; incLs 19.3± 21.7: CLOSE PTS ALong ALong thin cls LAm (CONT)		15.0 Box 5, 18.6 Box 6 (cont)	DEP 15.2 Pull #3 START 7.30 END 8:12 TIME 42 min DRL 42 min RAN — REC 9.8 (CONT)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   (TRANSLUCENT)

PROJECT GALLIPOLIS LOCK/DAM   HOLE NO. L-11/2

PROJECT GALLiPOLiS LOCK + DAM	INSTALLATION ORH-CD	SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SS/CLS		Box 6	PuLL #3
	21		20.0 - 20.6 : ½ CRushed			
474.8			CLS LAM @ 21.5 gRAding			LOSS ∅
						UNACC ∅
	22		SLS			
473.8			S. m.h., m.-dk.gR. gRAding		22.4	
	23		CLS/ICL		Box 7	
	24		m.-dK gR., S.-m.h.			
			SLK PTg. @ 22.7-23.0			
			∤ 23.6 : VE bK. 24.0-			DED ‡T/DEP 25.0
	25		24.5 w/dKcL. 0.1			PuLL #4
	26		CRushed, dK.gR. CLS		26.0	START 8:50
			PLd. ANg JT. @ 26.4-			END 9:12
	27		26.6 (PRob SAme cond		Box 8	TiME 22 min
469.0			24.0 -24.5) gRAding into			DRL 22 min
	28		ICL			RAN —
						REC 4.9
	29		P. bR., S-m.hd., BKN,		29.5	LOSS ∅
						UNACC ∅ T/DEP 29.6
	30		SLK 0.7 L.C. bTwN			DEP 29.7
	31		29.5 ∤ 38.0		Box 9	PuLL #5
	32					START 9:29
						END 10:30
	33				33.1	TiME 1 HR
						DRL 1 HR
	34				Box 10	RAN —
	35					REC 7.8
						LOSS 0.7
	36					UNACC 0.7
	37				36.9	
					Box 11	
458.5	38		Bottom HoLE		38.0	DEP 38.2 T/DEP 38.0
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67	GPO: 1968 OF—329-263	PROJECT GALLiPOLiS Lock ‡ DAM	HOLE NO. L-11/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4/5.5"

2. LOCATION (Coordinates or Station) MONO L-12 STA 7+55 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

3. DRILLING AGENCY W. G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) L-12/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

5. NAME OF DRILLER STEVE FRY

14. TOTAL NUMBER CORE BOXES 11

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/12/89 COMPLETED 1/13/89

7. THICKNESS OF OVERBURDEN @ 496.7

17. ELEVATION TOP OF HOLE 496.7

8. DEPTH DRILLED INTO ROCK 37.9

18. TOTAL CORE RECOVERY FOR BORING 37.7'

9. TOTAL DEPTH OF HOLE 458.8

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE			PULL #1
	1					START 11:05
			m.-C.S., m.h., m.gr			END 11:25
	2		w/0.1 L.3 bkn. 0.0		Box 1	TIME 30 min
			-5.2 (AVE 0.2 PIECES)			DRL 30 min
	3					RAN 5.0
					3.6	REC 4.9
	4				Box 2	LOSS 0.1
						UNACC 0.1
491.6	5					DEP/TDEP 5.0
			ICL			PULL #2
	6					START 7:30
			GREENISH gr., S.m.h			END 7:50
	7		SLK 0.1 S.gr.CL 5.2-		6.9	TIME 20 min UNACC @
			5.3; M SPACED PTgs			DRL 20 min
	8		ALONG ANG SLK PLNS		Box 3	RAN —
						REC 4.0
487.7	9					LOSS 0
			SS/SLS		DEP 9.1 T/DEP 9.0	
	10		Interbdd, CLS			PULL #3
			iON 16.7-16.9 bkn		10.3	
	11		17.9-19.2 w/cls lens			START 8:04
			18.2-18.5; CORE SPUN			END 8:22
	12		18.5-18.7 CLS LAM		Box 4	TIME 18 min
			@ 18.7; CLS LEN @			DRL 18 min
	13		19.6-19.8; 20.7-21.2			RAN —
						REC 9.5
	14				14.1	LOSS 0
						UNACC 0
	15					
	16				Box 5	
	17					
	18				17.9 Box 6	T/DEP 18.5
	19					DEP 18.9
	20		(CONT)		(CONT)	PULL #4 (CONT)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT GALLIPOLIS LOCK & DAM	HOLE NO. L-12/1

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SS/SLS		Box 6	PULL #4
	21				21.1	
474.8	22					START 8:32
	23		CLS s. m.h., m.-dk.gn, Shy TR. OR OCC. CL Stgs bKN 21.9-22.3; 23.5 - 24.2 & 25.6-26.6 ; SS LAM 27.8-28.0 ; 0.9 LC btwn 18.5 & 28.0 (PROB AT TOP)		Box 7	END 8:58
						TIME 26 min
	24					DRL 26 min
						RAN —
	25				25.0	REC 8.6
	26					LOSS 0.9
					Box 8	UNACC 0.9
	27					
468.7	28					T/DEP 28 DEP 28.4
	29		ICL R. bR, s-m. h, SLK bKN ZOS W/SLK BTWN 28.0 & 37.7		29.4	PULL #5 START 9:16
	30					END 9:50
	31				Box 9	TIME 24 min DRL 24 min
	32					RAN —
	33				33.2	REC 9.7 LOSS Ø
	34				Box 10	UNACC Ø
	35					
	36					
	37				37.0	
459.0					Box 11 37.7	T DEP 37.5
	38					DEP 37.9
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO: 1969 OF—329-242

PROJECT GALLIPOLIS Lock + Dam | HOLE NO. L-12/1

DRILLING LOG	**DIVISION** ORD	**INSTALLATION** ORH-CD		**SHEET** 1 **OF 2 SHEETS**

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO L-12 STA 7+12B

3. DRILLING AGENCY W.G. Hogues

4. HOLE NO. (As shown on drawing title and file number) L-12/2

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 496.4

8. DEPTH DRILLED INTO ROCK 38.4

9. TOTAL DEPTH OF HOLE 458.0

10. SIZE AND TYPE OF BIT 4" × 5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/13/89 COMPLETED 1/13/89

17. ELEVATION TOP OF HOLE 496.4

18. TOTAL CORE RECOVERY FOR BORING 38.4 %

19. SIGNATURE OF INSPECTOR JMP

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.4			SAND STONE			Pull #1
	1		m.-c.g., m.h. m.gr		Box 1	START 4:45
			lea. lt.gr. 1.0-2.5; Ang			END 4:50
	2		cont			TIME 5 min
						DRL 5 min
	3					RAN 4.9
						REC 4.9
	4				3.8	LOSS —
						UNACC —
491.2	5				Box 2	DEP 4.9
			CLS			Pull #2
	6		m.gr., s-m.h. 0.1			
			s.gr.cl @ 5.2 s.gr.cl			START 5:05
	7		@ 6.0: grading			END 5:35
					7.6	TIME 40 min
	8					DRL 40 min
488.0						RAN 9.9
	9		SANDSTONE		Box 3	REC 9.8
			shy, Fig., m.h., m.gr.			LOSS 1.0
	10		ve. shy. 8.4-9.4; hor			UNACC 1.0
			shy ptg @ 11.6: crushd			
	11		cls len 13.9-14.2:		11.1	
			Ang (30°) ptg @			
	12		15.8.			
	13				Box 4	
	14					
	15				11.8	DEP 14.8
						TD 14.9
480.6	16		SLS		Box 5	Pull #3
			SA., s.m.h., m.-dk			
	17		gr. w/occ. Ang. ss			START 5:55
			lenses & lam: ptgs			END 6:20
	18		at lam 17.0; 17.3:			TIME 25 min
			Ang. (30°) slk		12.7	DRL 25 min
	19		ptg @ 18.7: ptgs		Box 6	RAN 9.1
			@ 19.3, 19.6: ss 19.6-20.5			REC 10.6
	20		(cont)		(cont)	cont

				ELEVATION TOP OF HOLE **496.4**			Hole No. **L-12/2**

PROJECT GALLIPOLIS LOCK & DAM
INSTALLATION ORH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.9	20		SLS		Box 6	— Pull #3
	21		CLS			LOSS Ø
			SLy, S.m.h., m.dk.			UNACC Ø
	22		gR. OCC. SLK., bKN		22.5	
	23		wech 20.8-21.1'			
			21.8-23.5 grading			
	24				Box 7	
						DEP 23.9
	25					T/DEP 24.5
470.5						Pull #4
	26		ICL		25.9	START 7:20
			GREENISH gR. - R.bR			END 7:40 UNACC Ø
	27				Box 8	TIME 20 min
			S. -m.h. SLK. 1.9 L.C.			DRL 20 min
	28		btwn 29.1 & 39.9			RAN 5.1
						REC 4.6
	29		: 1.0 L.C. btwn		29.1	LOSS Ø
						DEP/T/DEP 29.0
	30		34.9 & 38.4			Pull #5
	31				Box 9	START 8:35
						END 9:30
	32					TIME 55 min
						DRL 25 min
	33				32.7	RAN —
						REC 3.9
	34					LOSS 1.9
					Box 10	UNACC 1.9
	35					
						DEP/T/DEP 34.9
	36					Pull #6
						START 9:55
	37					END 10:28
						TIME 33 min
						DRL 33 min
458.0	38		Rotton Hole			RAN
						REC 2.5
	39				38.4	LOSS — T/DEP 38.4
						UNACC —
	40					DEP 39.7
	41					
	42					
	43					
	44					

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JUN 67

GPO. 1968 OF—329-243

PROJECT GALLIPOLIS LOCK + DAM **HOLE NO.** L-12/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-ED	SHEET 1 OF 2 SHEETS

1. PROJECT GALLipolis Lock + Dam	10. SIZE AND TYPE OF BIT 4X5½
2. LOCATION (Coordinates or Station) MONO L-13 STA 7+07A	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE
4. HOLE NO. (As shown on drawing title and file number) L-13/1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED N/A UNDISTURBED N/A
5. NAME OF DRILLER DAVE HARPER	14. TOTAL NUMBER CORE BOXES 11
6. DIRECTION OF HOLE	15. ELEVATION GROUND WATER N/A
☒VERTICAL ☐INCLINED ___ DEG. FROM VERT.	16. DATE HOLE STARTED 1/13/89 COMPLETED 1/13/89
7. THICKNESS OF OVERBURDEN @ 497.0	17. ELEVATION TOP OF HOLE 497.0
8. DEPTH DRILLED INTO ROCK 37.9	18. TOTAL CORE RECOVERY FOR BORING 37.6 %
9. TOTAL DEPTH OF HOLE 459.1	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0	1 2		SANDSTONE LT.gr., H, M-C.gr. BKN PN w/0.2 SPACE		1	PULL #1 START 11:06 END 11:19 TiME 8min DRL 8min RAN —
493.9	3 4 5		CLS gr. S, Sh. mottled w/e-Br below 4.7, BKN 3.1-3.5, 4.2-4.7 mech		3.5	REC 4.7 LOSS Ø UNACC Ø DEP 4.8 T/DEP 4.7
491.6	6 7 8 9 10 11 12 13 14 15		SLS gr., S-m.H., S2, mottled w/R-Br., occ.FRAC. w/ SLK 5.4-5.5, scuffy BKN w/0.2 LC. 7.9-8.5, ANGLE PN 45° w/SLK 9.1-9.5 gradationally, interbdd w/vz.fgr SS 10.7-13.6 14.6-, Clay coated PN 15.5 + 15.6		2 7.4 3 11.0 4 14.6 5	PULL #2 START 11:25 END 11:40 TiME 15min DRL 15min RAN — REC 9.0 LOSS 0.2 T/Dept UNACC 0.7 DEP 8.9 PULL #3 START 12:35 END 1:00 TiME 25min DRL 25min RAN — REC 9.7 LOSS Ø UNACC Ø
481.9	16 17 18 19 20		SANDSTONE LT.gr., m-H, M-F.gr. occ SLS FRAG 19.2-21.0 Sh seam 15.0-15.1, cal Cem. below 21.0 (CONT)		18.3 6 (CONT)	T/DEP 18.6 DEP 18.9 PULL #4 (CONT)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

| PROJECT
GALLipolis Lock + Dam | HOLE NO.
L-13/1 |

						ELEVATION TOP OF HOLE			Hole No.	L-13/1

497.0

PROJECT GALLIPOLIS LOCK & DAM

INSTALLATION ORH-CD

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	PULL #4
	21					START 1:10
	22				21.8	END 1:36
474.3						TIME 26min
	23		SLS			DRL 26min
	24		gr, s.-M.H., sh, severely		7	RAN —
	25		BKN 27.0-27.2, -27.5-27.6,			REC 9.2
	26		27.9-28.0		25.5	LOSS 0.2
	27				8	UNACC 0.2
469.0	28					T/DEP 28.0
			ICL			DEP 28.9
	29		R.-BR., S, CLAYEY, OCC.		29.0	PULL #5
	30		mottled, w/gr-gn.gr,			START 1:50
	31		num frac, w/slk		9	END 2:20
	32		dk, gr above 30.0			TIME 30min
	33		severely BKN 28.7-29.0, 29.4-		32.7	DRL 30min
	34		29.6, 30.4.-30.5, 30.8-70.1			RAN —
	35		33.4 -33.6, 34.7-34.9, 37.3		10	REC 9.6
	36		37.6			LOSS ⌀
	37				36.6	UNACC ⌀
459.4			Bottom Hole		11	
	38				37.6	T/DEP 37.6
	39					DEP 37.9
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO STA 6+69B

3. DRILLING AGENCY W. G. Jaoues

4. HOLE NO. (As shown on drawing title and file number) L-13/2

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.3

8. DEPTH DRILLED INTO ROCK 38.5

9. TOTAL DEPTH OF HOLE 457.8

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B.57 - MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/13/89 COMPLETED 1/16/89

17. ELEVATION TOP OF HOLE 496.3

18. TOTAL CORE RECOVERY FOR BORING 37.7'

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.3			SANDSTONE			PULL #1
	1		LT.gr., H., M.-C. gr.			START 10:55
	2		Sh seam 0.0-0.1		1	END 11:05
						TIME 10 min
						DRL 10 min
	3		CAL cem 3.0-9.5			RAN 9.5
					3.6	REC 9.4
	4					LOSS 0.1
						UNACC 0.1 T/DEP 4.5
491.3	5				2	
	6		CLS			
			gr, S., Sh, S=Ucely BK			
	7		5.6-5.8, ANGL PN. 45° SLK, 6.2-6.4		7.0	
489.2						DEP 7.9
	8		SLS			PULL #2
			gr., S-M.H., gradational w/sh @ Top To sa bottom		3	START 7:30
	9		BKN 8.1-8.3			END 8:03
	10				10.6	TIME 33 min
	11					DRL 33 min
						RAN —
	12				4	REC 10.1
						LOSS Ø
483.4	13					UNACC Ø
			SANDSTONE		13.0	PULL #3
	14		gr., m-H., Uef. To Fgr			START 8:30
			HigH Ang Frac 13.3-13.8,			END 8:41 T/DEP 19.6
	15		BKN w/ang pn 15.6-15.8			TIME 11 min DEP 19.9
			Sh seam 16.5-16.6		5	DRL 11 min
	16					RAN —
	17					REC 9.3
						LOSS Ø
	18				17.6	UNACC Ø
					6	
477.4						DEP 18.9
	19		SLS		(CONT)	T/DEP 19.1
476.3	20		gr., m-H. sc			PULL #4 (CONT)

		ELEVATION TOP OF HOLE					
		496.3			Hole No. *L-13/2*		

PROJECT: *GALLIPOLIS Lock & Dam*
INSTALLATION: *ORH-CD*
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	Pull #4
			LT,gr., H. F-m.gr., cAl.cem.,			START 9:08
	21		mic Above 20.5, num Small		21.1	END 9:21
			clay stringers 20.7-20.8, 21.1			Time 13. min
	22		21.2			DRL 13min
						RAN —
473.4	23		SLS		7	REC 5.2
			gr, s, sh, cls.gr. s. 25.6-25.8			LOSS 0
	24		severely BKN mech bKN			uNACC 0
471.6			25.8-24.1			DEP 24.4 T/DEP 24.2
	25				24.7	Pull #5
			IcL			START 9:47
	26					END 10:15
			R-bR, S, occ mottled, w/gr		8	Time 28min
	27		To gn gr., num.Frac. w/			DRL 28min
						RAN —
	28		slk.		28.2	REC 5.2
						LOSS 0
	29					uNACC 0
	30				9	DEP 29.4 T/DEP 29.3
						Pull #6
	31					
					31.4	START 10:35
	32					END 11:35
						Time 60 min
	33					DRL 60min
						RAN —
	34				10	REC 7.4
						LOSS 1.0
	35					uNACC 1.0
					35.5	
	36					
					11	
	37					
458.6			Bottom Hole		37.7	T/DEP 37.7
	38					DEP 38.5
	39					
	40					
	41					
	42					
	43					
	44					

PROJECT: *GALLIPOLIS Lock & Dam* HOLE NO. *L-13/2*

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLipolis Lock + Dam	10. SIZE AND TYPE OF BIT 4 Ysk."
2. LOCATION (Coordinates or Station) MONO L-14 STA 6+59B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile
4. HOLE NO. (As shown on drawing title and file number) L-141	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A
5. NAME OF DRILLER STEVE FRY	14. TOTAL NUMBER CORE BOXES 10
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE STARTED 1/13/89 COMPLETED 1/13/89
7. THICKNESS OF OVERBURDEN Ø 497.4	17. ELEVATION TOP OF HOLE 497.4
8. DEPTH DRILLED INTO ROCK 37.5	18. TOTAL CORE RECOVERY FOR BORING 37.5
9. TOTAL DEPTH OF HOLE 459.9	19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.4	1 2		SANDSTONE m.-c.g., m.h., m.gr. UE bkn. 0.0-2.7 w/0.1 L.C		Box 1	Pull #1 START 3:59 END 4:15 TIME 16 min DRL 16 min RAN 5.0
494.7	3 4		ICL R.br., S.-m.h., bkn, slk 0.1 gr. CL 2.7-2.8	3.6		REC 3.9 LOSS 1.0 UNACC 1.0
492.9	5 6 7 8 9		CLS S.-m.h., m.-dk.gr., SLK.-CLOSELY SPACED SLK ptgs	7.9	Box 2	DEP 5.0 T/DEP 4.9 Pull #2 START 4:29 END 4:40 TIME 11min DRL 11min RAN 4.8 REC 4.8 LOSS —
487.5	10 11 12 13 14		SS/SLS Inter Bedd. CLS 18A 11.1-11.8 ptg AT CLS LEN 13.0-13.1 CORE SPUN CONTACT	11.1	Box 3 Box 4	DEP 9.8 T/DEP 9.7 Pull #3 START 4:49 END 5:17 TIME 28 min DRL 28 min RAN 8.8 REC 9.2 LOSS — UNACC —
482.7	15 16 17 18		SLS S.-m.h., m.-dk.gr. occ SA.	15.2	Box 5	
478.5	19 20		SANDSTONE (CONT)	18.9	Box 6 (CONT)	DEP 18.6 T/DEP 18.9 Pull #4 (CONT)

PROJECT GALLipolis Lock & Dam   HOLE NO. L-141

| PROJECT Gallipolis Lock + Dam | INSTALLATION ORH-LD | SHEET 2 OF 2 SHEETS |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		Box 6	PULL #4
	21		Sky., f.g. m.h., m.gr			START 5:00
	22					END 6:07
						TIME 67 min
	23					DRL 67 min
						RAN 10.1
473.6						REC 10.8
	24		CLS.		23.8	LOSS —
	25		m.-dk.gr. s.-m.h m.-		Box 7	UNACC —
			spaced hor sky prgs. occ.			
	26		w/ tr.gr. cl. coa .			
470.7			grading			
	27		ICL		27.7	
	28		greenish gr. -r.br.,			DEP 28.7
	29		s. -m.h., slk ve. bkn		Box 8	
	30		27.0 - 29.7 bkn, r.br.			T/DEP 29.7
	31		31.0 - 37.5 w/o.n Lc.		34.0	PULL #5
						START 6:30
	32				Box 9	END 7:10
						TIME 40 min
	33					DRL 40 min
						RAN 8.9
	34					REC 7.1
						LOSS —
	35				34.9	UNACC —
	36				Box 10	
	37					
459.9			Bottom Hole		37.5	DEP 37.6 T/DEP 37.5
	38					
	39					
	40					
	41					
	42					
	43					
	44					

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| PROJECT Gallipolis Lock + Dam | HOLE NO. L-14/1 |

	DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

DRILLING LOG

DIVISION ORD

INSTALLATION ORH-CD

SHEET 1 **OF** 2 **SHEETS**

1. **PROJECT** GALLIPOLIS LOCK + DAM
2. **LOCATION (Coordinates or Station)** MONO L-14 STA 6+21B
3. **DRILLING AGENCY** W. G. JAGUES
4. **HOLE NO. (As shown on drawing title and file number)** L-14/2
5. **NAME OF DRILLER** Dowell Beris
6. **DIRECTION OF HOLE**
   ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. **THICKNESS OF OVERBURDEN** O 493.3
8. **DEPTH DRILLED INTO ROCK** 38.0
9. **TOTAL DEPTH OF HOLE** 455.3

10. **SIZE AND TYPE OF BIT** 4x5½"
11. **DATUM FOR ELEVATION SHOWN (TBM or MSL)** M.S.L
12. **MANUFACTURER'S DESIGNATION OF DRILL** B-57 MOBILE
13. **TOTAL NO. OF OVERBURDEN SAMPLES TAKEN** / **DISTURBED** N/A / **UNDISTURBED** N/A
14. **TOTAL NUMBER CORE BOXES** 10
15. **ELEVATION GROUND WATER** N/A
16. **DATE HOLE** **STARTED** 1/16/89 **COMPLETED** 1/16/89
17. **ELEVATION TOP OF HOLE** 493.3
18. **TOTAL CORE RECOVERY FOR BORING** 38.0
19. **SIGNATURE OF INSPECTOR** JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
493.3			SANDSTONE			Pull #1
	1		M.-c.g., m.h., m.gr.		Box 1	START 4:20
			BKN into APPROX 0.3			END 4:35
	2		PIECES.			TIME 15min
						DRL 15min
	3					RAN 4.9
						REC 4.7
	4				3.9	Loss —
489.0						UNACC —
	5		ICL		Box 2	DEP 4.9 T/DEP 4.7
			Mottled R-BR., S-m.h.,			Pull #2
	6		SLK VE.S.gr. Cl. 4.3-5.0			START 4:40
			VE BKN 5.0 -6.4:			END 5:15
486.9	7		grading		7.3	TIME 35 min
			SLS/CLS			DRL 35min
	8		M.dk.gr., S.-m.h, occ		Box 3	RAN 9.9
			SA BKN. Along ha, IPR			REC 8.1
	9		FRAC 7.1-8.0 w/TR			Loss 0
			gr. Cl.: SA ZONE 10.2			UNACC 0
	10		-10.5: CLS. 10.5, 12.8:			
			SLS 12.8-17.4. SS. Len			
	11		17.4-17.4: SLI, SA. SLS,		10.9	
			below 17.4 BKN (mech)			
	12		22.0-23.0. SS Lens 22.6		Box 4	
			-25.4 ; VE BKN w/PASS			
	13		V. / L.C			
	14				14.2	
	15					DEP 14.8 T/DEP 19.7
					Box 5	Pull #3
	16					START 5:55
	17					END 6:45
						TIME 50 min
	18				17.9	DRL 50 min
					Box 6	RAN 9.2
	19					REC 10.3
						Loss 0
	20				Cont	UNACC 0
						(CONT)

PROJECT GALLIPOLIS Lock+Dam

HOLE NO. L-14/2

PROJECT
GALLiPoLis LocK ! DAm

INSTALLATION
ORH-CD

SHEET 2
OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20				Box 6	. PuLL #3
	21					
	22				21.6	
	23				Box 7.	T/DCP 23.1
	24					DCP 24.0
	25					PuLL #4
467.5	25				25.4	START 7:15
	26		CLS			END 7:50
			S. -M.h, m. -dK.gR, sHr			TiME 40 min
466.3	27		3RAding into			DLL 40 min
						RAN 5.9
			ICL		Box 8	REC 5.8
	28					Loss —
			gREENish gr -R.br.			uNACC —
	29		S. m.h. med spAced			
			ANg sLK ptgs. O.C			
	30		LC BTwN. 30.0 & 38.0		30.0	DCD 30.0 T/DCP 29.9
						PuLL #5
	31				Box 9.	START 8:40
	32					END 9:40
						TiME 60 min
	33					DRL 30 min
						RAN 8.1
	34				33.9	REC 7.5
	35					Loss 0.5
						uNACC 0.5
	36				Box 10.	
	37					
455.3	38		Bottom HoLE		38.0	DEP + T/DCP 38.0
	39					
	40					
	41					
	42					
	43					
	44					

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PROJECT
GALLiPoLis LocK+DAm

HOLE NO.
L-14/2

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
Mono L-15   STA 6+11B

3. DRILLING AGENCY
W. G. Jaoues

4. HOLE NO. (As shown on drawing title and file number)
L-1511

5. NAME OF DRILLER
Steve Fry

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN θ 497.7

8. DEPTH DRILLED INTO ROCK 38.0

9. TOTAL DEPTH OF HOLE 459.7

10. SIZE AND TYPE OF BIT 4x5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | STARTED 1/13/89 | COMPLETED 1/16/89

17. ELEVATION TOP OF HOLE 497.7

18. TOTAL CORE RECOVERY FOR BORING 38.3

19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.7	1		SANDSTONE m.h., m.-c.g., m.gr. bkn into s.pieces (max 0.2)		Box 1	Pull #1 START 8:53 END 9:00 TIME 5min DRL 5min RAN 5.
495.6	2					REC 3.9 LOSS — UWACC —
	3		ICL greenish-gr-r.b. s-m.b slk ve.s. gr 2.2-2.4: bkn	3.6		DEP + T/DEP 3.9
	4		5.0-5.5 ve.s., fat gr. cl 6.2-6.7		Box 2	Pull #2 START 9:15 END 9:25
	5					TIME 15min DRL 15min
	6				6.7	RAN 3.4 REC 4.1
491.0	7		SLS m-dk.gr., SA., s-m.h., ha., o., IPR, IT. 7.1-7.5 m. spaced hor. shy ptg.		Box 3	LOSS — T/DCP 8.0 UWACC — DCP 8.4 Pull #3 START 9:37 END 9:52 TIME 15min DRL 15min
	8					
	9					
487.2	10			10.3		RAN 2.9 REC 4.1
	11		CLS SLY. S.-m.h, m.-dk. gr ve. bkn (Prob mech) 10.7-13.7 w/1.f L.C.		Box 4	LOSS — T/DEP UWACC —
	12					Pull #4 START 10:06 END 10:28
	13					
484.0	14		SLS/SS Interbdd: SLS -SA, m dk.gr., m.h. SS. -Sky, Pig. , m.gr. m.h. Hor.ptg. @ 14.5: bkn SS. Zo (mech) 16.6-17.2 SS. Zo. increasing w/depth bkn. w/core spins 17.5-17.9 hor ptgs @ 18.5, 19.0 : 19.2 SS. 19.2 - 21.0	13.6	Box 5	TIME 22min DRL 22min RAN 6.4 REC 4.0 LOSS 1.4 UWACC 1.4
	15					
	16					
	17			17.7		DEP 17.7 T/DEP 17.5
	18				Box 6	Pull #5 START 10:45 END 10:58
	19					TIME 13min
	20		(CON'T)	(CON'T)	(CON'T)	(CON'T)

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE	Hole No.
497.7	L-15/1

PROJECT	INSTALLATION	SHEET 2
GALLIPOLIS Lock / DAM		of 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	20		SLS/SS Interbdd.		Box 6	DRL 13min
476.7	21				21.1	RAN 3.3 T/DEP 21
			.SS. /CLS.			REC 5.4
	22		VE bkn. CLS 21.3 - 21.5		Box 7	LOSS —
			! 21.9 - 22.4 : S. gr. CL.			UNACC —
	23		COA pts @ 22.9			DEP 22.9
			closely spaced pts			Pull # 6
	24		btwn ss/cls (mAx-			START 11:11
			0.8) 22.9 - 26.6			END 11:34
	25				24.8	TIME 23min
						DRL 23min
	26				Box 8	RAN 7.5
471.1						REC 4.7
						LOSS —
						UNACC —
	27		ICL			DEP+T/DEP 27.5
						Pull #7
	28		GREENISH gR. - R. br,		28.0	START 7:35 RAN —
						END 7:48 REC 1.3
	29		SLK. S.-m.h. bkw			TIME 13min LOSS 0.4
						DRL 13min UNACC 0.4
	30		27.5 - 29.3 w/0.4 L.C.		Box 9	DEP29.4 T/DEP29.4
						Pull #8
	31		bkw 29.3 - 32.7 w/0.8			START 8:03
						END 8:18
	32		L.C. bkw to bottom		31.8	TIME 15min
						DRL 15min
	33		OF HOLE		Box 10	RAN —
						REC 2.6 T/DEP 32.7
	34					LOSS 0.8
						UNACC 0.8 DEP 34.1
	35					Pull #9
						START 8:30
	36				32.9	END 8:55
						TIME 25min
	37				Box 11	DRL 25min
						RAN —
	38		Bottom Hole		38.3	REC 5.6 T/DEP 37.9
459.4						LOSS 0
	39					UNACC 0 DEP 38.8
	40					
	41					
	42					
	43					
	44					

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GPO: 1969 OF—329-245

PROJECT	HOLE NO.
GALLIPOLIS Lock & DAM	L-15/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO L-15 STA 5173B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-15/2

5. NAME OF DRILLER DOWELL NORRIS

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ___ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.2

8. DEPTH DRILLED INTO ROCK 37.6

9. TOTAL DEPTH OF HOLE 459.6

10. SIZE AND TYPE OF BIT 4" X 5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/16/89 | COMPLETED 1/17/89

17. ELEVATION TOP OF HOLE 497.2

18. TOTAL CORE RECOVERY FOR BORING 37.6 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2	1 2 3		SANDSTONE m.-c.g., m.h, m.gr bkn into sm segmend irr, ang contact		Box 1	Pull #1 START 7:05 END 10:45 TIME 20 min DRL 20 min RAN 4.9 REC 4.9
493.4	4		CLAY s.-m.h., m.-dk.gr., wea ve.s 3.8-4.9		3.9	LOSS Ø UNACC Ø DEP+T/DEP 4.9
492.3	5 6 7		ICL/cls greenish-gr-e-br slk, s.m.h. bkn. 4.9-6.9.		Box 2 7.4	Pull #2 START 10:35 END 11:30 TIME 55 min DRL 55 min RAN —
488.8	8 9 10 11		SLS SA, s.m.h., m.-dk.gr irr ptg @ 10.0 grading shy @ 12.2 hor.ptgs @ 13.4 †14.4		Box 3 1.1	REC — LOSS — UNACC — T/DEP 10.1
	12 13 14				Box 4	
482.1	15 16		SANSTONE		14.8 Box 5	DEP 14.9 Pull #3 START 7:10 END 7:34
	17 18		Shy, fig., m.h., m.gr. hor. ptg (mech) @ 16.7; vert frac @ 17.9-18.2; 0.1 clk.gr. Cls len 18.2-18.3		18.3 Box 6	TIME 24 min DRL 24 min RAN — REC 4.9
	19 20		Hor ptg along shy lam @ 19.1; irr, 0.1 (con+)		(con+)	LOSS Ø UNACC Ø DEP+T/DEP 20.0

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PROJECT GALLIPOLIS Lock, DAM | HOLE NO. L-15/2

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DRILLING LOG (Cont Sheet)

PROJECT Gallipolis Lock + Dam			**INSTALLATION** ORH-CD		**ELEVATION TOP OF HOLE** 497.2	**Hole No.** L-15/2	**SHEET** 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.9	20		SANDSTONE SA. CLS LENS @ 19.7 A8 W/trace of crushing C mouvment		Box 6	Pull #4
	21					
	22		CLS/SLS S.-m.h, m-dk.gr, sLy Closely spaced hor. ptgs @ 21.9-22.9 & 24.4-24.6 grading UE. SLy @ 25.5	21.9		START 7:50 END 8:22 TIME 32 min
	23				Box 7	DRL 32 min RAN — REC 9.4
	24					LOSS 0.6
	25					UNACC 0.6
	26			25.4		
	27				Box 8.	
469.8						
	28		ICL			
	29		R-.bR. S. m. h.	28.9		
	30		SLK UE. bkn (mech)			T/DEP 29.6 DEP 30.0
	31		28.9-30.0 w/o.6L.c		Box 9.	Pull #5
	32		BKN 30.0-37.6			START 8:45 END 10:03 TIME 18 min
	33		w/.7 L.C.	32.9		DRL 18 min RAN
	34				Box 10	REC 6.9
	35					LOSS 0.7 UNACC 0.7
	36					
	37			36.4		
459.6			Bottom Hole	37.6		T/DEP 37.6 DEP 38.1
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JUN 67

GPO 1969 OF—328-243

PROJECT Gallipolis Lock + Dam	HOLE NO L-15/2

DRILLING LOG

DIVISION	INSTALLATION	SHEET 1
ORD	OEH-CD	OF 2 SHEETS

1. PROJECT 6 Allipolis Lock + Dam

10. SIZE AND TYPE OF BIT 4 x 5 ½"

2. LOCATION (Coordinates or Station) MONO L-16 STA 5+63 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) L-16/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

5. NAME OF DRILLER DAVE HARPER

14. TOTAL NUMBER CORE BOXES 11

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/16/89 COMPLETED 1/16/89

7. THICKNESS OF OVERBURDEN 0 497.0

17. ELEVATION TOP OF HOLE 497.0

8. DEPTH DRILLED INTO ROCK 37.9

18. TOTAL CORE RECOVERY FOR BORING 37.1

9. TOTAL DEPTH OF HOLE 459.1

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE			Pull #1
	1		GR. H. m-cge. BKN 0.0-			START 9:40
			0.5, 1.3-1.5			END 9:54
495.0	2				1	TIME 14 min
			ICL			DRL 14 min
	3		Cly, R.br., S, mottled, w/grt gngr occ pn w/skl, scocaly bkn 3.4-3.7, cls, gr. 2.0-2.2			RAN —
493.3					3.7	REC 5.0
	4		CLS			LOSS 0
			gr. S. Sh.			UNACC 0
492.0	5					DEP 5.0 T/DCP 4.8
	6		SLS		2	Pull #2
			GR, S, M-H, Sa Interbdd			START 10:01
	7		w/ ve.F. gr ss., bkn		7.2	END 10:18
	8		mech 5.0-5.1, mech 15.6			TIME 17 min
						DRL 17 min
	9		15.5, Ang. DN. 30°		3	RAN — UNACC 0
						REC 3.7
	10		6.2-6.3, Sh below 21.0			LOSS 0
					10.9	T/DEP + DEP 9.5
	11		ve,F. gr ss. 14.0-15.6, 17.7			Pull #3
						START 10:23
	12		-19.4, 19.9-20.4, cal 19.7.		4	END 10:45
						TIME 22 min
	13		19.9, Bkn, pn @ spacing			DRL 22 min
						RAN —
	14		0.2 below 21.6 w/bcc		13.8	REC 2.8 — DEP 11.8 Pull #4
						LOSS 0 START 10:45
	15		clay coating, clay seam			UNACC 0 END 11:18
					5	TIME 38 min
	16		.05 ≈ 23.9			DRL 33 min
						RAN —
	17					REC 4.3
						LOSS 0
	18					UNACC 0
						DEP + T/DEP 15.8
					12.3	Pull #5
					6 (cont)	START 11:30
	19					END 11:42
						TIME 12 min
	20		(cont)			DRL 12 min
						RAN — UNACC 0
						REC 4.0
						LOSS 0 T/DCP 19.5

PROJECT GALLIPOLIS Lock + DAM			**INSTALLATION** ORH-LD			**SHEET** 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		6	PULL #5
	21				21.0	DEP 20.8
						PULL #6
	22					START 12:30
					7	END 1.12
	23					TIME 42 min
						DRL 42 min
	24					RAN —
						REC 8.4
	25				24.7	LOSS 0.3
						UNACC 0.3
	26				8	
470.2	27		ICL			
	28		R. bR. , S, CLAY, NUM,		28.1	T/DEP 28.6
	29		FRAC. W ISLK, dkgR			DEP 28.9
						PULL #7
	30		ABOVE 30.0, severely bKN		9	START 1:27 END 1:48
	31		27.6 - 27.8, mech 28.4 · 28.6			TIME 21 min DRL 21 min
	32		31.0 · 31.2, mech 32.0 - 32.3		32.0	RAN — REC 3.0	T/DEP32.0
	33		32.5 - 32.8, mech 36.7-37.1			LOSS 0.9 UNACC 0.9	DEP 32.3
	34				10	PULL #8
	35				35.5	START 1:58 END 2:20 TIME 22 min
	36				11	DRL 22 min RAN —
459.9	37		Bottom Hole.		37.1	REC 5.1	T/DEP 37.1
	38					LOSS 0 UNACC 0	DEP 37.9
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1990 OF - 628-603   PROJECT GALLIPOLIS Lock+DAM   HOLE NO. L-16/1
JUN 67

DRILLING LOG	DIVISION OED	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO L-16 STA 5+25 B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-16/2

5. NAME OF DRILLER DAVID HARPER

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 496.8

8. DEPTH DRILLED INTO ROCK 36.9

9. TOTAL DEPTH OF HOLE 459.9

10. SIZE AND TYPE OF BIT 4"x5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/17/89 COMPLETED 1/17/89

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 36.9 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			SANDSTONE			Pull #1
	1		M:C.g., m.h. m.gr. ch.sp. Cmax		Box 1	START 8:35
			.3) PTJS 0.0-1.8. 45°ANG			END 8:55
	2		Contact			TIME 20 min
494.3						DRL 20 min
						RAN —
	3		ICL			REC 4.5
			motted R.br., S.-m.h			LOSS 0
	4		SLK		3.8	UNACC 0
492.3						T/DEP 4.5
	5		CLS			DEP 5.0
			m.dk.gr, s.m.h, occ			Pull #2
	6		SLK 0.4 LC. (mech)		Box 2	START 9:05
			4.5-4.9 grading shy			END 9:25
	7		@ 6.1			TIME 20 min UNACC 0.4
					7.3	DRL 20 min
	8					RAN —
						REC 4.2
					Box 3	LOSS 0.4
487.7	9					DEP/T/DEP 9.1
			SS/SLS			Pull #3
	10		Interbdd SS.-fig,		10.8	
			Shy m.h., m.gr. SLS-			START 9:35
	11		m-dk.gr, s.-m.h.			END 10:08
			25°, O.J.T. 13.6-14.2			TIME 33 min
	12		in 5'20.		Box 4	DRL 33 min
	13					RAN —
						REC 9.0
	14					LOSS 0.2
						UNACC 0.2
					18.6	
481.7	15				Box 5	
			CLS			
	16		m-dk.gr, s-m.h. occ			
			SLY PTS Shy. w/occ			
	17		gr. cl. LEN CL con PTg			
			@ 15.8 . BKN. 16.1-16.7			
	18		w/0.2 LC SLY PTg		18.3	T/DEP 18.3
			@ 17.6 : chosehy		Box 6	DEP 18.9
	19		spaced, hor PTgs			Pull #4
			(MAX 0.6)			
	20		(CONT)		(CONT)	(CONT)

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(TRANSLUCENT)

PROJECT Gallipolis Lock & Dam HOLE NO. L-16/2

PROJECT GALLiPOLis LOCK ! DAM	INSTALLATION ORH-CD					SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS (cont)		Box 6	PULL #4
	21				21.1	START 10:25
	22		18.3-25.7 : SHY 25.7-27.3			END 11:25
						TIME 1hr
						DRL 1hr
	23				Box 7	RAN —
	24					REC 9.0
						LOSS 0
	25					UNACC 0
	26				25.9	
	27				Box 8	
468.9	28		ICL			
	29		mottied - R.br, slk		29.3	T/DEP 27.3
	30		S. - m.h bkn			DEP 27.9
			0.3 L.C. btwn 27.3!			PULL #5
			32.9			START 11:36
	31				Box 9	END 12:05
						TIME 29min
	32					DRL 29min
						RAN —
	33					REC 5.3
					32.9	LOSS 0.3 T/DEP 32.9
	34				Box 10	UNACC 0.3
						DEP 33.9
	35					PULL #6
						START 12:45
	36					END 1:05
						TIME 20min
				Box 11.	36.5	DRL 20min
459.9	37		Bottom HoLE		36.9	RAN —
						REC 4.0 T/DEP 36.9
	38					LOSS 0
	39					UNACC 0 DEP 37.9
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67   GPO 1968 OF—329-243

| PROJECT GALLIPOLIS LOCK ! DAM | HOLE NO. L-16/2 |

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-LD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO L-17 STA 5+15 B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-17/1

5. NAME OF DRILLER DAVID HARPER / STEVE FRY

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.9

8. DEPTH DRILLED INTO ROCK 37.2

9. TOTAL DEPTH OF HOLE 459.7

10. SIZE AND TYPE OF BIT 4 7/16"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/16/89 COMPLETED 1/16/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 37.2 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9	1 2		SANDSTONE m.-c.g., m.h., m.gr. sm. pieces (may 0.3)		Box 1	PULL #1 START 2:45 END 2:55 TIME 10 min DRL 10 min RAN —
494.2	3 4 5 6 7		ICL m.gr - R.br., s.m.h, slk ve. s. gr. ch. 2.7-2.9; ve bkn 3.5-7.3	3.5	Box 2	REC 3.5 LOSS Ø T/DEP 4.0 UNACC Ø DEP 5.0 PULL #2 START 3:00 END 3:15 TIME 15min DRL 15min RAN —
489.6	8 9 10		SLS sa, m-dk.gr, s.m.h, shy	7.3	Box 3	REC 4.9 LOSS Ø UNACC Ø DEP/T/DEP 8.4 PULL #3 START 3:45 END 4:15 TIME 30 min DRL 30 min RAN —
486.5	11 12 13 14 15		CLS/SS Iterbdd SS. Ø 12.9-13.5 ve bkn CLS 13.5-15.4 w/hi (?) L.C.	10.6	Box 4	REC 7.7 LOSS 1.1 UNACC 1.1
481.5	16 17		SLS sa, s-m.h, m.dk.gr med spaced hor ptgs	14.6	Box 5	T/DEP 16.1
478.9	18 19 20		SANDSTONE shy, fig, m.h, m.gr. 0.1 L.C. btwn 18.0 & 27.2 prob ≈ 18, -18.1 (BKN) angle contact	18.9	Box 6 CONT	DEP 18. PULL #4 (CONT)

PROJECT GALLIPOLIS LOCK & DAM **HOLE NO.** L-17/1

PROJECT				INSTALLATION				SHEET 2
GALLIPOLIS LOCK & DAM				ORH-CD				OF 2 SHEETS

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOVERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	20		CLS		BOX 6	PULL #4
	21		sLy m-dk.gr, s.m.h.			
	22		PTg shy. med spaced PTgs (may 1.0 pieces)			START 4:33
						END 5:00
						TIME 25 min
					22.8	DRL 25 min
	23					RAN 11.9
	24				BOX 7	REC 9.1
	25					LOSS 0.1
						UNACC 0.1
	26				26.2	
469.7	27		ICL		BOX 8	T/DEP 27.2
	28					DEP 28.0
	29		R.br., s-m.h, VE bkn sLk 27.2-35.9 w/o 0.7 L.l		29.9	PULL #5
	30					START 5:25
	31				BOX 9	END 6:10
	32					TIME 45 min
	33					DRL 45 min
						RAN 8.0
						REC 8.7
						LOSS 0.7
					33.7	UNACC 0.7
	34					
	35				BOX 10	
	36					T/DEP 35.9 DEP 36.0
						START 7:15 PULL #6
						END 7:30
						TIME 15 min
459.7	37		BOTTOM HOLE		37.2	DRL 15 min T/DEP 37.2
						RAN 2.2
						REC 1.3
	38					LOSS 0
						UNACC 0 DEP 38.2
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67	GPO: 1968 OF—328-243	PROJECT GALLIPOLIS LOCK & DAM	HOLE NO. L-17/1

Hole No. *L-17/2*

DRILLING LOG

DIVISION ORD	**INSTALLATION** ORH-LD	**SHEET** 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MOND L-17 STA 4+85B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-17/2

5. NAME OF DRILLER DOWELL NORRIS

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 496.6

8. DEPTH DRILLED INTO ROCK 37.3

9. TOTAL DEPTH OF HOLE 459.3

10. SIZE AND TYPE OF BIT 4x5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE | STARTED 1/26/89 | COMPLETED 1/27/89

17. ELEVATION TOP OF HOLE 496.6

18. TOTAL CORE RECOVERY FOR BORING 37.3 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
496.6			SANDSTONE			PULL #1
	1		M.-C.g, m.h, m.gr, Thin m. bdd		1	START 8:43
						END 9:16
						TIME 33 min
	2					DRL 33 min
494.2						RAN 4.1
494.0	3		CL gr. s., FAT			REC 4.1
					3.8	LOSS ∅
	4		CLS			UNACC ∅ T/DEP 9.1
	5		S.-m.h, m.t.gr s. to #6		2	DEP 5.1
	6		: bkn 3.8-4.6 : s. gr. cl			PULL #2 START 10:19
						END 10:58
	7		Fld. pt'g @ 7.0 : ve bkn			TIME 39 min
					7.3	DRL 18 min
	8		7.8-8.9 w/core spin @			RAN — T/DEP 7.8
						REC 3.7
	9		8.4 : ve s. 10.7-11.5 w/a z			LOSS ∅
					3	UNACC ∅ DEP 9.1
	10					PULL #3 START 11.05 T/DEP 9.4
						END 11:30
	11				10.7	TIME 25 min
485.1						DRL 25 min DEP 10.7
484.4	12		TRANS ZO. :11.5-12.2 (BKN)			RAN — ┃ PULL 4
			SANDSTONE		4	REC 2.2 ┃ START 8:20
	13		Sky F.g., m.h, m.gr			LOSS ∅ ┃ END 9.20 DEP 10.7
						UNA. ∅ ┃ TIME 1 HR
	14		Ang. smooth contact			┃ DRL 1 HR
482.2					14.4	┃ RAN —
	15		CLS			REC 1.3
	16		S.-m.h, m.dk.-gr.		5	LOSS 0.2 UNACC 0.2
						PULL #5
	17		Interbdd w/m-dk.gr			START 9:30
						END 10:40
	18		SLS. m. spaced hor,		13.1	TIME 1HR 10min
						DRL 1HR 10min
	19		CL co 2 pt @s huy cl.		6	RAN —
						REC 7.9
	20		(cont)		(cont)	LOSS ∅
						UNACC ∅ T/DEP 13.0
						DEP 13.5
						PULL #6 (cont)

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam **HOLE NO.** L-17/2

PROJECT GALLIPOLIS LOCK & DAM	INSTALLATION ORH-CD	SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS			PULL #6
	21				6	START 10:50
	22		COA. PTS @ 15.0 : 15.4		21.7	END 12:04
						TIME 1hr 14min
	22		w/SLK ANG PTGS @ 5.7			DRL 1hr 14min
	23					RAN —
	24		& 15.8, 16.7 : SS. LENS		7	REC 10.2
	25		19.7 - 20.8 : M, SPACED			LOSS 0
						UNACC 0
	26		HOR. PTGS 20.8 - 28.4		25.5	
	27					
468.2	28				8	
	29		ICL		29.3	
						DEP 29.6
	30		L. DK, S: ?? : n : SLT			PULL #7
	31		bkn 4.2 L.C btwn 29.6		9	START 12:40
						END 14:45
	32		37.3			TIME 2hrs 5min
						DRL 2hrs 5min
	33				32.9	PAN — T/DEP 33.7
						REC 3.5
	34					LOSS 4.2
	35					UNACC 4.2
	36				10	
459.3	37		Bottom : Hole		37.3	DEP+T/DEP 39.3
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1966 OF - 628 - 603 | PROJECT GALLIPOLIS LOCK & DAM | HOLE NO. L-17/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono L-18 STA 4+75B

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) L-1811

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN θ 496.6

8. DEPTH DRILLED INTO ROCK 39.6

9. TOTAL DEPTH OF HOLE 457.0

10. SIZE AND TYPE OF BIT 4" X5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/16/89 COMPLETED 1/17/89

17. ELEVATION TOP OF HOLE 496.6

18. TOTAL CORE RECOVERY FOR BORING 39.6 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6	1 2		SANDSTONE m-c.g., m.h., gr. sth. br bkn w/0.4 LC (mech) 0.2 S.gr.cl. 2.5-2.7		Box 1	Pull #1 START 8:25 END 8:40 TIME 15min
499.1	3 4 5		CLS S-m.h., m.-dk.gr, occ slk grading. shy w/ depth 25° Ang. Contact w/ gr. cl. coa		3.5 Box 2	DRL 15min RAN 5.1 REC 4.2 LOSS 0.4 UNACC 0.4 T/DEP #6 DEP 4.9
490.0	6 7 8 9 10		SLS S. m.h, m.-dk.gr, occ.shy.		7.4 Box 3	Pull #2 START 8:47 END 8:59 TIME 12min DRL 12min RAN 5.1 REC 5.0 LOSS — UNACC — T/DEP 9.6 DEP 10.0
485.2	11 12 13 14 15 16 17 18 19		SS/CLS Inter bdd: SS-f'g, m.h. m.gr. CLS.S, m.h.-mdk gr. 0.5 LC (Problem mech) btwn 9.6 & 11.4; SS-11.4 -12.6; V.S. CLS lcl 12.6 -12.9; CLS 12.9-13.1; SS.-13.1-13.5; CLS 13.5 14.6 w/poss 0.2 L.C.; SS. 14.6-15.2; CLS/SLS 15.2-17.1 w/v.bkn Zo. @16.6-17.1-Sly.SS. 17.1-20.4: grading into		11.1 Box 4 15.0 Box 5 18.5 Box 6	Pull #3 START 9:07 END 9:21 TIME 14min DRL 14min RAN 4.3 REC 3.9 LOSS .5 UNACC .5 T/DEP 13.9 DEP 14.3 Pull #4 START 9:31 END 9:47 TIME 16min DRL 16min RAN 5.0 REC 5.3 LOSS .2 UNACC .2 DEP 19.3 T/DEP 19.2 Pull #5
	20		(cont)		(cont)	(cont)

PROJECT GALLIPOLIS LOCK & DAM				INSTALLATION ORH-CD		SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
476.2	20				Box 6	PULL#5 START 10:00 END 10:13 TIME 13 min UNACC Ø DRL 13 min
	21		CLS S.-m.h., m.-dk.gr.			RAN 4.3
	22		PTS. shy. 0.1 L.C. btwn		22.1	REC 4.3
	23		20.9 + 23.7 (mech)		Box 7	LOSS Ø
	24		0.7 L.C(?) btwn 23.7 &			DEP 23.7 T/DEP 23.6 PULL#6
	25		27.6 grading into		25.5	START 10:27 END 10:43 TIME 16. min
	26		ICL		Box 8	DRL 16. min RAN 4.9 REC 3.1
	27					LOSS 0.7 UNACC 0.7
469.0	28		ICL			DEP 28.5 T/DEP 29.0 PULL#7 START 11:05
	29		R.be-greenish		29.8	END 11:15 UNACC .3 TIME 10min
	30		gr., bkn; s-m.h.			DRL 10min
	31		SLK.		Box 9	RAN 3.4 REC 3.1
	32		0.3 L.C. btwn 27.6 &			LOSS .3 DEP 32.4 T/DEP 32.0
	33		32.0. 0.3 L.C. btwn		33.6	PULL#8 T/DEP START 7:25 RAN 1.7
	34		32.0 L.C. btwn 32.0			END 7:45 REC 1.7 TIME 20min LOSS Ø DRL 20min UNACC Ø DEP 33.3
	35		& 39.6.		Box 9	PULL#9 START 8:00 END 8:12 TIME 12min
	36					DRL 12min
	37					RAN T/DEP 36.9
	38					REC 2.9
	39					LOS 0.3 UNACC 0.3
457.0			BOTTOM HOLE		39.6	DEP 39.3
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET / OF 2 SHEETS

1. PROJECT GALLI DOLIS LOCK + DAM	10. SIZE AND TYPE OF BIT 4 x 5½	
2. LOCATION (Coordinates or Station) MONO L-18 STA 4+40 B	11. DAYUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.	
3. DRILLING AGENCY W. G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-57 MOBILE	
4. HOLE NO. (As shown on drawing title and file number) L-18/2	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN / DISTURBED N/A / UNDISTURBED N/A	
5. NAME OF DRILLER DOWELL NORRIS	14. TOTAL NUMBER CORE BOXES 11	
6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A	
	16. DATE HOLE / STARTED 1/27/89 / COMPLETED 1/30/89	
7. THICKNESS OF OVERBURDEN ⊘ 496.47	17. ELEVATION TOP OF HOLE 496.47	
8. DEPTH DRILLED INTO ROCK 38.5	18. TOTAL CORE RECOVERY FOR BORING 38.5'	
9. TOTAL DEPTH OF HOLE 457.97	19. SIGNATURE OF INSPECTOR ZMD	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.47			SANDSTONE LT. GR., M-H., M-C. GR FLAGGY Bd BKN PNS, 3 SPACING FE STAINED 0.0-0.7		1	PULL #1 START 4:29 END 4:40 TIME 16 min DRL 16 min RAN — REC 1.3 — DEP 2.0 LOSS 0.7 UNACC 0.7
493.77	2				3.6	PULL #2 START 4:47 END 5:00 TIME 10 min DRL 10 min RAN REC 3.7 LOSS ⊘ T/DEP+DEP 4.9
	3		CLS GR, S., Sh, CLAYCY @ TOP TO SLT @ BOTTOM			
	4					UNACC ⊘
	5				2	PULL #3
490.77	6		SLS GR, S -M.H., Sa, SEVERELY		6.9	START 5:29 END 6:00 TIME 31 min
	7					DRL 31 min
	8		BKN MECH 6.7-6.9, 14.2		3	RAN 4.1 REC 4.1
	9		.14.6, 15.0-15.4, 17.7-18.1			LOSS ⊘ UNACC ⊘
	10		CLAYCY 6.9-7.4, 13.3-13.6		10.3	T/DEP+DEP 9.8 PULL #4
	11		CLS · GR. S. Sh, 9.2-9.8			START 18:30
	12				4	END 19:00 TIME 30 min DRL 30 min
	13					RAN 5.2 REC 5.2
	14				14.3	LOSS ⊘ UNACC ⊘ — T/DEP 19.4 — DEP 19.7
	15				5	PULL #5 START 19:25
	16					END 19:45 TIME 20 min
	17					DRL 20 min
478.37	18				17.9	RAN 5.3 REC 5.3
			SANDSTONE GR M-H F.-UCF. GR, SLT		6	LOSS ⊘
	19				CONT	UNACC ⊘ — T/DEP 19.4 DEP 19.8
	20		(CONT)			

							SHEET 2
PROJECT GALLipoLis LocK+DAm			INSTALLATION ORH-CD				OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
475.87	20		SANDSTONE		6	Pull #6
	21		SLT		21.3	START 21:00
			gR., S-m.H., Sa, cLayey			END 21:20
	22					TimE 20min
			23.8 - 25.6		7	DRL 20min
	23					RAN 4.5
						REC 4.5
	24					LOSS Ø
						UNACC Ø
	25				25.1	DCP 29.8
						Pull #7
	26				8	START 21:30
						END 22:00
	27					TimE 30min
						DRL 30min
468.37	28		CLS			RAN 5.6
			ER., S, SL.			REC 5.6
467.17	29				28.9	LOSS Ø
						UNACC Ø
	30		ICL			DCP 29.7
			R.bR, S, Sh, occ n:otHd		9	Pull #8
	31					START 22:35
			w/gR + gN.gR., occsLK			END 23:15
	32					TimE 40min
			seveRly bKN 29.5 - 29.7			DRL 40min
	33					RAN 4.9
			bKN w/num.SLK 33.5-39.6		33.5	REC 4.9
	34					LOSS Ø
						UNACC Ø
	35					DCP 34.6
					10	Pull #9
	36					START 7:45
						END 8:09
459.27	37				37.2	TimE 24min
			SLS			DRL 24min
	38		gR - gN.gR., S, SL		11	RAN 3.5
457.97			BoTTom HolE			REC 3.5
	39				38.5	LOSS Ø DCP 38.5
						UNACC Ø
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET / OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO L-19 STA 4+30B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-19/1

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 496.6

8. DEPTH DRILLED INTO ROCK 37.9

9. TOTAL DEPTH OF HOLE 458.7

10. SIZE AND TYPE OF BIT 4 X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/26/89 COMPLETED 1/26/89

17. ELEVATION TOP OF HOLE 496.6

18. TOTAL CORE RECOVERY FOR BORING 36.6'

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6			SANDSTONE			Pull #1
	1		LT. GR. M-H. -H., M-C.GR.			START 5:33
	2		FLAGGY bd bkn pn 0.1		1	END 5:40
						TIME 7min
						DRL 7min
	3		SPACING 0.0-1.1			RAN 4.9
493.2						REC 4.9
	4		CLS		39	LOSS ∅
			GR., S., Sd.,			UNACC ∅
	5					T/DEP AND DED 4.9
491.2			SLS		2	Pull #2
	6		GR. M-H. -S., Sa			START 5:55
	7					END 6:10
					7.6	TIME 15min
	8					DRL 15min
	9					RAN —
						REC 3.6
	10				3	LOSS 0.9
486.3						UNACC 0.9 T/DEP 9.9
	11		SLS/CLS			DEP 9.5
			GR, S, Sd, w bkn pn 0.1			Pull #3
	12		SPACING 10.3 - 12.1		12.0	
489.5			SLS			START 6:22
	13		GR., m-S.H. Sa			END 6:52
					4	TIME 30min
482.6	14					DRL 30min
			SLS/CLS			RAN —
	15		Sh, interbd w/cls, gr, S, Sa,			REC 8.5
			w/bkn pn 14.0-16.5 0.1			LOSS ∅
	16		SPACING		157	UNACC ∅
	17				5	
	18					T/DEP 17.5
	19					DEP 19.9
	20		(CONT)		(CONT)	Pull # 4

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PROJECT Gallipolis Lock+Dam HOLE NO. L-19/1

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE			496.6		Hole No. L-19/1	
PROJECT Gallipolis Lock + Dam			INSTALLATION OEH-CD			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS		5 20.9	Pull #9
	21					
	22					START 7:07
						END 7:31
	23					TIME 24 min
						DRL 24 min
	24				23.9	RAN 9.3
						REC 8.8
	25					LOSS 0.5
						UNACC 0.5
	26					
469.9	27					T/DEP 27.2
			ICL			DEP 27.5
	28		R. BR., S-M.H, occ		286	Pull #5
	29		mottled w/slk, gr-gn.			START 7:51
			gr, occ slk, sh			END 8:22
	30					TIME 31 min
			Severely BKN 28.6-30.1			DRL 31 min
	31					RAN 9.4
			33.1-33.5			REC 6.7
	32				36.9	LOSS 2.7
	33					UNACC 2.7
	34					
	35					
	36					
460.0			Bottom Hole		36.6	DEP 36.6
	37					
	38					DEP 37.9
	39					
	40					
	41					
	42					
	43					
	44					

PROJECT	HOLE NO.
Gallipolis Lock + Dam	L-19/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono L-19 STA. 3+90B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) L-19/2

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.3

8. DEPTH DRILLED INTO ROCK 38.3

9. TOTAL DEPTH OF HOLE 458.0

10. SIZE AND TYPE OF BIT 4 x 5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/30/89 COMPLETED 1/30/89

17. ELEVATION TOP OF HOLE 496.3

18. TOTAL CORE RECOVERY FOR BORING 38.3'

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.3			SANDSTONE			Pull #1
	1		m.-c.g., m.h., m.gr. thin			START 8:10 RAN —
			bdd. bkn 0.0-2.1 w/1.0			END 9:22 REC 1.1
	2		L.C		Box 1	TIME 72min LOSS 1.0
493.6						DRL 72min UNACC 1.0
493.3	3		cl-gr, s. FAT			T/DEP + DEP 2.1
			SLS			Pull #2
	4		sa, s.-m.h., m-dk.gr			START 12:57
			w/sm. ss. incl.		4.3	END 1:10
	5					TIME 13min
			grading into			DRL 13min UNACC Ø
	6				Box 2	RAN —
489.6						REC 4.6
						LOSS Ø
	7		CLS			T/DEP + DEP 6.7
	8		Sly, s-m.h, m-dkgr.		8.0	Pull #3
						START 1:15
	9		Sl1, Sly sa - 11.0			END 2:00
					Box 3	TIME 45min
	10		SLS/SS interbdd			DRL 45min
	11					RAN —
						REC 5.2
	12				11.5	LOSS Ø
						UNACC Ø
	13				Box 4	T/DEP + DEP 11.9
						Pull #4
477.2	14					START 2:20
			SLS			END 2:30
	15		sa, s.-m.h, m.-dk.gr		15.3	TIME 10min
			IRR, VERT, 0 FRAC			DRL 10min
	16		14.5 -15.0 Sly SS. 16.6			RAN —
			-18.2 VE.S gr. cl			REC 4.4
	17		19.6 -19.8		Box 5	LOSS 0.3
						UNACC 0.3
	18					T/DEP + DEP 16.6
						Pull #5
	19				18.8	START 3:00
476.8					Box 6	END 3:20
						TIME 20min
	20		CLS (cont)		Cont	DRL 20min
						RAN —
						(cont)

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE	Hole No.
496.3	L-19/L

PROJECT	INSTALLATION	SHEET 2
GALLIPOLIS LOCK & DAM	OPH-CD	OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	PULL #5
	21					REC 5.1 UNACC⁴
			s- m.h, m.-dkgr., shy			LOSS Ø
	22					7/DEP + DEP 21.4
			w/slk on ptgs		22.4	PULL #6
	23					START 4:10
			VE. brk w/slk 23.1		Box 7	END 9:25
	24					TIME 15min
			23.8 25.3 – 26.6			DRL 15min UNACC 6
	25					RAN 4.2
						REC 4.2
	26					LOSS Ø T/DE 25.6
					26.1	DEP 26.6
	27					PULL #7
468.0					Box 8	START 5:05
	28		ICL			END 5:25
						TIME 20min
	29		P. br, s. – m.h, bkn, slk			DRL 20min
						RAN 5.9
	30				29.8	REC 0.9
						LOSS 1.0
	31					UNACC.0
					Box 9	T/DEP + DEP 31.5
	32					PULL #8
						START 5:45
	33				23.2	END 6:10
						TIME 25min
	34					DRL 25min
						RAN 5.7
	35				Box 10	REC 5.7
						LOSS Ø
	36					UNACC Ø
	37				36.9	
					Box 11	DEP + T/DEP 37.2
	38					PULL #9
458.0			Bottom Hole		39.3	DEP 39.3
	39					START 6:45
						END 7:05 LOSS Ø
	70					TIME 20min UNACC 6
						DRL 20min
	41					RAN —
						REC 1.1
	42					DEP 91.7
	43					
	99					

PROJECT	HOLE NO.
GALLIPOLIS LOCK DAM	L-19/L

DRILLING LOG	DIVISION ORD		INSTALLATION ORN-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono L-20 STA 3+80 B

3. DRILLING AGENCY W. G. Jacues

4. HOLE NO. (As shown on drawing title and file number) L-20/1

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.8

8. DEPTH DRILLED INTO ROCK 40.6

9. TOTAL DEPTH OF HOLE 456.2

10. SIZE AND TYPE OF BIT 4 X 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/26/89 COMPLETED 1/27/89

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 38.0'

19. SIGNATURE OF INSPECTOR IMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8			SANDSTONE			PULL #1
	1		m.-c.g., m.h., m.gr		Box 1	START 9:40 END 9:53
	2		Thin bdd to 2.0			TIME 13 min DRL 13 min
	3					RAN - REC 4.7
	4				3.8	LOSS Ø UNACC Ø
491.7	5				Box 2	TDEP 4.7 DEP 8.9 PULL #2
491.5			CL gr. s., FAT			START 9:58 END 10:12
	6		CLS/SLS			TIME 14 min
	7		Interbdd, shy S. m.h.,		7.9	DRL 14 min RAN 5.3
	8		m.-dk.gr, shy w/tr. gr			REC 5.1
	9		CL 2 0.2 cm Hor ptgs		Box 3	LOSS 0.2 UNACC 0.2
	10		0.2 LC btwn 5.3 & 10.0			DEP 8.9 TDEP 10.0
	11		MED- CLOSELY SPACED		10.9	
	12		Hor pTgs throughout		Box 4	PULL #3 START 10:20
	13					END 10:48 TIME 28 min
	14					DRL 28 min RAN 10.1
	15				12.7	REC 10.1 LOSS Ø
	16				Box 5	UNACC Ø
	17					
478.4	18				18.4	
	19		SANDSTONE shy. F.g., m.h, m.gr		Box 6	
	20		(cont)		cont	DEP 20.0

DRILLING LOG (Cont Sheet)			ELEVATION TOP OF HOLE *496.8*		Hole No. *L-20/1*	
PROJECT *Gallipolis Lock & Dam*			**INSTALLATION** *ORH-CD*			**SHEET** *2* OF *2* SHEETS
ELEVATION a	**DEPTH** b	**LEGEND** c	**CLASSIFICATION OF MATERIALS** (Description) d	**% CORE RECOV- ERY** e	**BOX OR SAMPLE NO.** f	**REMARKS** (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		Box 6	T/DEP 20.1
475.3	21					Pull #4
	22		CLS		22.1	START 10:56 END 11:32
	23		S.-m.h, m-dk.gr.,		Box 7	TIME 36 min DRL 36 min RAN 9.7
	24		sky w/gr.ch lenes			REC 9.7
	25		¿ lam okn (mech)		25.7	LOSS Ø UNACC Ø
	26		24.1-26.6 w/1.7 lc:			
	27		core spun @ 26.6: huy		Box 8	
	28		gr. ch coa ptgs 27.5-			
	29		29.2			
467.0	30		ICL			DEP+T/DEP 29.8
	31		R.br, s.-m.h, okn		30.9	Pull #5 START 7:50 END 8:25
	32		SLK		Box 9	TIME 35 min DRL 35 min RAN —
	33					REC 3.3 LOSS Ø T/DEP 33.1 UNACC Ø
	34				34.4	DEP 33.9
	35					Pull #5 START 9:00
	36				Box 10	END 9:25 TIME 25 min
	37					DRL 25 min RAN — REC 4.9
458.8	38		Bottom Hole		38.0	LOSS Ø T/DEP 38.0 UNACC Ø
	39					
	40					
	41					DEP 40.6
	42					
	43					
	44					

ENG FORM 1836-A JUN 67   (ER 1110-1-1801)   GPO 1960 OF - 828 - 603

PROJECT *Gallipolis Lock & Dam*	**HOLE NO.** *L-20/1*

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO L-20 STA 3+40A

3. DRILLING AGENCY W. 6. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-20/2

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.7

8. DEPTH DRILLED INTO ROCK 37.7

9. TOTAL DEPTH OF HOLE 459.0

10. SIZE AND TYPE OF BIT 4 x 5 1/2

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B. -53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/27/89 COMPLETED 1/27/89

17. ELEVATION TOP OF HOLE 496.7

18. TOTAL CORE RECOVERY FOR BORING 37.7

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE			Pull #1
	1		LT.GR. M.-H., M-C.GR, FE			START 6:42
	2		STAINED 0.0-2.0, SLIGHT to		1	END 6:48
						TIME 6 min
	3		mod bkd 0.0-2.0			DRL 6 min
493.0						RAN —
						REC 4.7
	4		CLS	3.8		LOSS 0.2
			GR.,S.,Sh, CLSCAM .05 @ 3.7+4.1			UNACC 0.2
491.5	5		BKN 3.7-3.8, 4.9-5.2			DEP 5.0 T/DEP 4.9
	6		SLS		2	Pull #2
			GR., S-M.H., Sh, bkn			START 6:59
	7		PN 0.4 spacing, occ	7.5		END 7:08
	8		interbdd CLS, severly			TIME 9 min
						DRL 9 min
	9		bkn 7.5-7.6, 11.0-11.3		3	RAN —
	10					REC 3.6
			14.0-14.7, 15.1-15.3, 18.2-			LOSS 0.4 T/DEP 8.8
	11		18.8, CLS,.S,GR,Sh, 8.3-7.6,11.5-	11.3		UNACC 0.9
	12		12.2, 13.5-18.0, SQ 15.5-16.7		4	DEP 9.9
	13		bkn w/cl coating 16.7-			Pull #3
	14		17.0			START 7:22
	15			15.1		END 7:45
	16					TIME 23 min
	17				5	DRL 23 min
	18					RAN —
477.5	19			18.8	6 (con't)	REC 8.9
	20		SANDSTONE			LOSS 1.0
			GR, M-H, VEF-FGR SLT			UNACC 1.0
						T/DEP 18.8
						DEP 19.6
						Pull #4

PROJECT GALLIPOLIS LOCK & DAM   **HOLE NO.** L-20/2

PROJECT						
GALLIPOLIS LOCK + DAM			INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SANDSTONE		6	Pull #4
475.3	21					START 8:51
	22		SLS		22.6	END 9:23
			ge., S., Sh, bkn, pn. 0.3			TIME 32
	23					DRL 32
			SPACINg, BKN 21.6 - 21.7			RAN —
	24				7	REC 10.3
			23.1 - 23.6, 26.5 - 27.8			Loss 0
	25					uNACC 0
	26				26.3	
	27					
468.3	28				8	
	29		ICL			T/DEP 29.1 / DEP 29.9
	30		R-be, S, Sh, NUM. SLK		29.9	Pull #5
	31		gRAy Above 32.0		9	START 9:41 END 10:06
	32		BKN 29.7 - 31.0			TIME 25min DRL 25min
	33		CINdey 32.5 - 33.3		33.5	RAN — REC 8.4
	34					Loss 0.2 uNACC 0.7
	35				10	
	36					
	37					
459.0			Bottom HOLE		37.7	T/DEP + DEP 37.7
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1960 OF - 628 - 603

PROJECT	HOLE NO.
GALLIPOLIS LOCK + DAM	L-20/2

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS
1. PROJECT GALLIPOLIS LOCK + DAM			10. SIZE AND TYPE OF BIT 4 x 5½		
2. LOCATION (Coordinates or Station) MONO L-21 STA 3+30 B			11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.		
3. DRILLING AGENCY W.G. JAQUES			12. MANUFACTURER'S DESIGNATION OF DRILL B.53 MOBILE		
4. HOLE NO. (As shown on drawing title and file number) L-21/1			13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A
5. NAME OF DRILLER DAVE HARPER			14. TOTAL NUMBER CORE BOXES 10		
6. DIRECTION OF HOLE			15. ELEVATION GROUND WATER N/A		
☑ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.			16. DATE HOLE	STARTED 1/27/89	COMPLETED 1/27/89
7. THICKNESS OF OVERBURDEN Ø 496.7			17. ELEVATION TOP OF HOLE 496.7		
8. DEPTH DRILLED INTO ROCK 37.9			18. TOTAL CORE RECOVERY FOR BORING 37.9		
9. TOTAL DEPTH OF HOLE 458.8			19. SIGNATURE OF INSPECTOR JMO		

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE			PULL #1
	1		LT.GR., M.H.-H, M-C GR,			START 10:00
			BKN PN, 2 SPACING 0.0-2.6		1	END 10:13
	2		Fe SURFACE STAIN 0.0-0.6			TIME 13min
			F. GR. 2.0-3.1,			DRL 13min
493.6	3				3.4	RAN 4.5
			SLS			REC 4.5
	4		GR, M-H, Sa			LOSS Ø
492.2						UNACC Ø T/DEP 4.5
	5		SANDSTONE			DEP 5.0
			LT.GR. M.H-H, M.-C GR.		2	PULL #2
	6		Fe STAINED SURFACE			START 10:20
	7				7.1	END 10:33
489.4						TIME 13min
	8		SLS/CLS			DRL 13min
						RAN —
	9		70% SLS, 30% CLS, BKN		3	REC 3.7 T/DEP 8.5
	10		PN 0.4 SPACING, SLS			LOSS Ø
					10.6	UNACC Ø DEP 9.3
	11		GR., S.-MH, CH, CLS			PULL #3
						START 10:40
	12		GR, S, Sha; 8.1-9.0, 13.7-			END 11:17
	13		19.9, 15.5-16.2, CL,GRAY,		4	TIME 37min
						DRL 37min
	14		DS @ 7.3, SE 9.5-10.2			RAN —
	15				14.3	REC 6.4
						LOSS 1.0
	16					UNACC 1.0
	17				5	T/DEP 15.6
	18					DEP 12.9
477.5	19				18.9	PULL #4
			SANDSTONE		6 (CONT)	START 11:35
	20		(CONT)			(CONT)

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PROJECT GALLIPOLIS LOCK+DAM.   HOLE NO. L-21/1

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 496.7			Hole No. L-2111	
PROJECT GALLIPOLIS LOCK + DAM		INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					Pull #4
	21		SANDSTONE gr., m.H., F-vF.gr., high angle frac. 20.7-21.3		6	END 12:07
						Time 32min
474.6	22					DRL 32min
			SLS		22.6	RAN —
	23		gr, S-m.H, sh, Bkn			REC 9.5
	24		PNS 0.3 spacing, bkn			Loss 0.3
						UNACC 0.3
	25		mcch 25.2-25.4, 27.0-27.2		7	
	26					DEP+T/DEP 25.4
					26.2	Pull #5
	27					START 12:46
						END 1:28
	28					Time 42min
					8	DRL 42min
467.7	29					RAN —
						REC 3.4
	30		ICL		30.0	Loss 1.3
	31		R.bL - S.-m.h., sh, occ			UNACC 1.3
	32		SLF, occ mottled/w		9	T/DEP 32.1
	33		gr. + gn.gr., gr Above 33.0, scurely bkn 32.0			DEP 32.4
	34		32.1, 33.3-33.4, 33.9-34.1			Pull #6
	35		37.7-37.5		34.7	START 1:40
						END 2:10
	36				10	Time 30min
						DRL 30min
	37					RAN —
						REC 5.0
458.8	38		BOTTOM HOLE		37.9	Loss Ø
	39					UNACC Ø T/DEP 37.3
	40					DEP 37.9
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO L-21 STA 2+84B

3. DRILLING AGENCY W.G. Jaques

4. HOLE NO. (As shown on drawing title and file number) L-21/2

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.2

8. DEPTH DRILLED INTO ROCK 37.2

9. TOTAL DEPTH OF HOLE 459.0

10. SIZE AND TYPE OF BIT 4x55"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL.

12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/27/89 COMPLETED 1/30/89

17. ELEVATION TOP OF HOLE 496.2

18. TOTAL CORE RECOVERY FOR BORING 37.2

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.2			SANDSTONE			PULL#1
	1		m-c.g., m.h., m.gr			START 10:30
	2		bkn to 2.0		Box 1	END 10:37 TIME 7min DRL 7min RAN —
	3					REC 5.2
	4				3.8	LOSS 0.3 UNACC 0.3
491.0	5					DEP+T/DEP 5.0
490.0	6		CL gr., s., FAT		Box 2	PULL#2 START 10:29 END 10:54
	7		CLS s.-m.h., m-dk.gr, shy.		7.3	TIME 34min LOSS 0.3 DRL 34min UNACC 0.3
	8		w/closely spaced gr.cl.			RAN —
	9		C@@/fld, hor ptgs 0.3		Box 3	REC 4.6 DEP-9.0
486.1	10		LC btwn 5.2 & 10.1			T/DEP 10.1
	11		CLS/SLS Interbdd, occ -SA, m-dk gr. shy, occ hvy gr CLse		11.0	PULL#3 START 25:21 END 23:30
	12				Box 4	TIME 9min DRL 9min
	13					RAN 4.3 REC 3.9
482.7						LOSS 0.4
481.8	14		SS/CLS Depositional Breccia, Bkn w/lo.g LC 14.0-14.9		14.9	UNACC 0.4
	15		SLS s.-m.h., SA, m-dk gr, shy			
	16		VE bkn (mech) 14.4-15.4		Box 5	
	17		w/0.5 L.C SA 16.0-18.0			
477.6	18		CLS s.-m.h. m-dk.gr		18.4	DEP+T/DEP 18.4
	19		CLS s.m.h, m-dk.gr (CONT)		Box 6 (CONT)	PULL#4 START 7:50 RAN — END 8:13 REC 5.2 TIME 23min LOSS 0.5 DRL 23min UNACC 0.5
	20					

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PROJECT Gallipolis Lock & Dam HOLE NO. L-21/2

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| | | | | | | | SHEET 2 OF 2 SHEETS |

PROJECT: GALLIPOLIS LOCK & DAM
INSTALLATION: ORH-LD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS			Pull #4 T/DEP 20.1
475.4					Box 6	DEP 20.7
	21		SANDSTONE			Pull #5
474.2	22		SHY, f.g. m.h., m.gk			
			CLS		22.6	START 8:25
	23					END 9:04
			S. -m.h., m. -dk.gk.shy.w			TIME 39min
	24					DRL 39min
			gk. cl. -se & coa ptgs			RAN —
	25				Box 7	REC 9.0
	26					LOSS 0.1
						UNACC 0.1
	27				26.4	
	28				Box 8	
467.5						
	29		ICL			T/DEP 29.2
			M. -dk.gk. -k.bk, s. -m.h.		29.7	DEP 29.5
	30					Pull #6
	31		Ikk slk ptgs to 33.5		Box 9	START 9:17
	32		w/0.1 lc btwn 28.7 &			END 9:45
			29.2 Becoming k.bk			TIME 28min
	33					DRL 28min
			@ 33.5.		33.5	RAN —
	34				Box 10	REC 8.0
	35					LOSS 0
	36					UNACC 0
459.0	37		Bottom Hole		37.2	T/DEP 37.2
	38					DEP 37.5
	39					
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO L-22 STA 2+79B

3. DRILLING AGENCY W.G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-22/1

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.9

8. DEPTH DRILLED INTO ROCK 40.2

9. TOTAL DEPTH OF HOLE 456.2

10. SIZE AND TYPE OF BIT 4 x 5 ½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/27/89 COMPLETED 1/27/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 39.7

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE			PULL #1
	1		LT.GR., M.H.-H m-cGR.			START 2:30
			OCC THIN CLAYEY STRINGERS			END 2:42
	2		FINE GRAINED 0.5-0.8		1	TIME 12 min
			LT. FE. STAIN 3.0-3.8			DRL 12 min
	3		+ FLAGGY			RAN 4.7
						REC 4.7
	4				3.8	LOSS Ø
491.7						UNACC Ø T/DEP 4.7 DEP 5.0
	5		SLS			PULL #2
			GR, S., SH, CLS 6.1-6.5		2	START 2:50
	6		GR. S. SL.			END 3:10
	7				7.1	TIME 20 min
488.8						DRL 20 min
	8		SANDSTONE			RAN 4.1
			GR., M.H. / F.-UE.F.GR		3	REC 3.6 T/DEP 8.8
	9		High ANG FRAC 8.2-8.8			LOSS 0.5
486.8						UNACC 0.5 DEP 9.8
	10		SLS/CLS			PULL #3
			inter bdd. SLS. GR.		10.9	START 3:51
	11					END 4:05
			M.H-S., SH., 9.6 -13.1			TIME 19 min
	12				4	DRL 19 min
			14.2 -15.2 -15.3 -17.2			RAN 5.9
	13					REC 5.0
			18. 0-20.0, CLS GR.S.SL.			LOSS 0.9
	14					UNACC 0.9 T/DEP + DEP 19.2
			13.1-14.3, 15.2-15.3, 17.2 -		14.7	
	15					PULL #4
			18.0-20.0-21.1, BRN 9.6-			START 4:10
	16				5	END 4:19
			9.8, 16.9-17.2			TIME 31 min
	17					DRL 31 min
			CL SEAM, .05 @ 19.0		18.0	RAN —
	18					REC 9.2
			+ 19.1, .03 @ 20. + 20.3		6	LOSS 0.9
	19				(CONT)	UNACC 0.9 CONT
	20		(CONT)			CONT

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT GALLIPOLIS LOCK + DAM **HOLE NO.** L-22/1

PROJECT GALLIPOLIS LOCK+DAm			INSTALLATION ORH-CD			SHEET Z OF Z SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLSKLS .05 @ 21.0		6	Pull #4
475.3	21					
	22		SANDSTONE LT.ge.-gr, m.H., v.c.F.-F.gr.		21.7	
	23		CAL cem., below 23.6			
472.1	24				7	
	25		CLS GR, S, sh bln Throughout			DeP 24.4 T/Dm 24.3
						PULL #5
470.1	26				25.9	START 4.59
	27		ICL R.Br. m.H.-S, shl, occ			END 5:10 TIME 12min
	28		mottled w/gr + gn.-gr		8	DRL 12min PAN 9.5
	29		occ SLK, GR + clayey			REC 5.6
	30		Above 29.0, severely		29.5	LOSS 2.9 UNREC 2.9
	31		Blk 28.2 - 32.5			
	32					
	33				9	DeP 32.6 T/DeP 32.8
						PULL #6
	34					START 5.41
	35				35.8	END 6.12 TIME 31min
	36					DRL 31min
	37				10	PAN 6.9 REC 5.2
	38					LOSS 1.7 UNREC 1.7
	39					
456.7	40		Cotton Hole		39.7	T/DeP 39.7 DeP 40.2
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station) MONO L-22 STA 2+90 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) L-22/2

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 496.1

8. DEPTH DRILLED INTO ROCK 39.3

9. TOTAL DEPTH OF HOLE 456.8

10. SIZE AND TYPE OF BIT 4 x 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/30/89 | COMPLETED 1/30/89

17. ELEVATION TOP OF HOLE 496.1

18. TOTAL CORE RECOVERY FOR BORING 39.3

19. SIGNATURE OF INSPECTOR LMN

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.1			SANDSTONE			Pull #1
	1					START 2:36
			M-c.g., m.h., m.gr		Box 1	END 2:47
	2					TIME 11 min
			0.2 L.C. 4.3-4.5			DRL 11 min
	3					RAN —
					3.7	REC 4.6
491.8	4					LOSS 0.2
						UNACC 0.2
	5		SLS/CLS			T/DEP 4.8 / DEP 5.0
			Interbdd, m-dk.gr,		Box 2	Pull #2
	6					START 2:58
			S-m.h., shy. 0.4 L.C.			END 3:15
	7				7.3	TIME 17 min
			btwn 7.3 ＆ 8.2 (mech)			DRL —
	8					RAN 3.0 / T/DEP 8.2
			Closely spaced hor			REC 0.4
	9				Box 3	LOSS 0.4
			cl coc /fld pkgs,			UNACC / DEP 8.6
	10					Pull #3
			10.0-17.7 w/1.6 L.C.			
	11				11.2	START 3:52
						END 4:15
	12					TIME 13 min
						DRL 13 min
	13				Box 4	RAN 9.5
						REC 7.9
	14					LOSS 1.6
					19.8	UNACC 1.6
	15					
	16					
	17				Box 5	
	18					DEP 17.9 / T/DEP 17.2
						Pull #4
477.2	19		SANDSTONE			START 4:30
			shy, F.g., m.h., m.gr, slt, cont		19.8 cont	END 5:05
	20					(cont)

	ELEVATION TOP OF HOLE								

PROJECT: GALLipolis Lock & DAM

INSTALLATION: OEH-LD

ELEVATION TOP OF HOLE: 491.1

Hole No. L-22/2

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
475.3	20		33. I.er, pTg @ 19.0		Box 6	Pull #4
	21		CLS			Time 35min
	22		S.-m.h., m-dk.gr			DRL 35min
			closely spaced, hor p'ts			RAN 6.7
						REC 5.6
472.8	23					Loss 1.1
					23.3	UNACC 1.1 T/DEP 23.3
	24		CL			
			UE.S., R.br.			
	25				Box 7	
	26					
469.3						
	27		SLS/CLS		27.2	
	28		Interbdd, s. m.h, m-			DEP 27.6
			dk.gr.		Box 8	Pull #5
	29					
						START 5:23
465.8	30				31.1	END 5.42
	31		IcL			TiME 19min
			R.br, s.-m.h., br. w/shk			DRL 19min
	32		0.4 Lc bTwN 34.7 & 37.3			RAN —
					Box 9	REC 11.4
	33					Loss —
						UNACC —
	34					T/DEP 33.2
	35					DEP 34.2
						Pull #6
	36				35.7	START 6:54
						END 7.12
	37				Box 10	TiME 18min
						DRL 18min
	38					RAN —
						REC 9.2
456.8	39		BotToM HoLE		39.3	Loss 0.4
						UNACC 0.4
	40					T/DEP 37.3
	41					DEP 40.6
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
Mono L-23 STA 2+30B

3. DRILLING AGENCY
W. G. JADYES

4. HOLE NO. (As shown on drawing title and file number)
L-23/1

5. NAME OF DRILLER
STEVE FRY

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 495.9

8. DEPTH DRILLED INTO ROCK 40.0

9. TOTAL DEPTH OF HOLE 455.9

10. SIZE AND TYPE OF BIT 4 V 5½"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE — STARTED 1/31/89 — COMPLETED 1/31/89

17. ELEVATION TOP OF HOLE 495.9

18. TOTAL CORE RECOVERY FOR BORING 39.3

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
495.9	1 2 3		SANDSTONE LT. gr., m-H, m-c gr. BKN @ surface 0.0-0.8 Fe stain 0.0-3.0		1	PULL #1 START 5:50 END 6:00 TIME 10 min DRL 10 min RAN 4.7 REC 4.7
455.7	4				3.8	LOSS Ø UNACC Ø T/DEP 4.5 DEP 5.0
490.4	5		CLS LT. gr., S, Sh, BKN 5.0-5.5		2	PULL #2
	6 7 8		SANDSTONE gr, m-H, F-VEF.gr. SLS gr, m-H, sa. 6.0-6.7 Sh seam bkn 7.6-7.9 CAL-ccm 6.8-7.4		6.9 3	START 6:12 END 6:20 TIME 8 min DRL 8 min RAN 4.1 REC 4.1 T/DEP 8.6
487.2	9		Shs /cls 70% Sls, 30% cls,			LOSS Ø UNACC Ø DEP 10.0
	10 11 12 13 14 15 16		gr, S-m.H, Sh, FLAGGY BKs, PN., 0.2 spacing Occ cl coating on pn mech BKN 11.7-12.0, cl stn 0.03 @ 15.2, .01 @ 12.6 sa. slt below 15.4		10.3 4 14.2 5	PULL #3 START 6:46 END 6:55 TIME 9 min DRL 9 min RAN 2.9 REC 2.5 DEP 13.5 LOSS .4 UNACC .4 PULL #4 START 7:21 END 7:36 TIME 15 min
479.6						DRL 15 min
478.6	17		SANDSTONE gr, mH., F-VEF.gr. SLS /cls		17.7	RAN 7.8
	18 19 20		70% Sls 30% cls gr, m.-H, shaly, FLAG .03 @ 21.0 (cont)		6 (cont)	REC 6.2 LOSS 1.6 UNACC 1.6 T/DEP 18.5 (cont)

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock + Dam	HOLE NO. L-23/1

ELEVATION TOP OF HOLE: 495.9

PROJECT						Hole No. L-23/1

PROJECT: Gallipolis Lock + Dam

INSTALLATION: ORH-CD

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/CLS			Drilling
	21				6	Pull #5
	22					START 7:54
	23				22.8	END 8:16
						TIME 22min
471.9	24					DRL 22min
			Icl			RAN 8.7
	25		R-BR, S-M.H, Sh, occ		7	REC 7.6
	26		SLK, ae ABOVE 29.7, R-BR			LOSS 1.1
	27		Below 29.7, CL 29.0-28.2		26.5	UNACC 1.1
	28		31.7-33.6, Sh. 28.2-31.7			T/DEP 28.2
	29		33.6-39.3, Severely BKN			
	30		26.5-28.2, 28.8-29.3			DEP 29.4
	31		30.6-31.1, 33.6-33.8		31.1	Pull #6
						START 9:18
	32					END 9:42
	33					TIME 24min
	34					DRL 24min
	35				35.0	RAN 5.9
	36					REC 5.0 UNACC.9
	37					LOSS .4
	38					T/DEP 33.6
						Pull #7
						START 10:06
						END 10:18
						TIME 12min
						DRL 12min
						RAN 5.7
						REC 4.8
						LOSS 0.9
						UNACC 0.9
456.6	39		EC +Cu. HOLE		39.3	T/DEP 39.3
	40					DEP 40.0
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1960 OF - 628-082   JUN 67

PROJECT: Gallipolis Lock + Dam   HOLE NO. L-23/1

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		Hole No. L-23/2 SHEET 1 OF 2 SHEETS

Hole No. L-23/2

1. PROJECT: GALLIPOLIS LOCK + DAM
2. LOCATION (Coordinates or Station): MONO L-23 STA 1+85.8
3. DRILLING AGENCY: W.G JAQUES
4. HOLE NO. (As shown on drawing title and file number): L-23/2
5. NAME OF DRILLER: DAVE HARPER
6. DIRECTION OF HOLE: ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: Ø 496.6
8. DEPTH DRILLED INTO ROCK: 38.6
9. TOTAL DEPTH OF HOLE: 458.0

10. SIZE AND TYPE OF BIT: 4 1/5½"
11. DATUM FOR ELEVATION SHOWN (TBM or MSL): M.S.L
12. MANUFACTURER'S DESIGNATION OF DRILL: B-53 MOBILE
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED N/A UNDISTURBED N/A
14. TOTAL NUMBER CORE BOXES: 10
15. ELEVATION GROUND WATER: N/A
16. DATE HOLE STARTED: 1/30/89 COMPLETED: 1/30/89
17. ELEVATION TOP OF HOLE: 496.6
18. TOTAL CORE RECOVERY FOR BORING: 38.6 %
19. SIGNATURE OF INSPECTOR: JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
496.6			SANDSTONE			Pull #1
	1		m.-c.g., m.h. STA.bR.			START 10:20
					Box 1	END 10:30
	2					TIME 10 min
						DRL 10 min
	3					RAN —
						REC 4.6
492.7	4		CL		3.6	LOSS 0.1
491.9			gR.S. FAT CL			UNACC 0.1 T/DEP 4.7
	5		CLs/sLs		Box 2	DEP 5.0
			Interbdd, s-m.h, m-dk.gR			Pull #2
	6		shy: closely spaced shy			START 10:38
			pTgs w/TR.gR. CL, COR			END 10:53
	7		4.7-7.3 w/0.7 LC (mecL)		7.3	TIME 15 min
489.3						DRL 15 min
	8		SANDSTONE			RAN —
			shy., f.g. m.h., m.gR		Box 3	REC 4.2
	9					LOSS 0.7
			Uc bKN 9.6-10.3			UNACC 0.7 T/DEP 9.6
486.3	10					DEP 9.8
						Pull #3
	11		CLs/sLs		11.2	START 11:04
			Interbdd s-m.h,			END 11:38
	12		m. dk.gR, occ shy			TIME 34 min
			bKN w/TR.gR. CL.		Box 4	DRL 34 min
	13		COR on hoe shy 13.0-			RAN —
			15.0 w/0.4 L.C. (mecL)			REC 7.4
	14					LOSS 0.4
			bKN 23.4-25.4 w/			UNACC 0.4
	15		0.9 L.C.		15.0	
	16				Box 5	
	17					T/DEP 17.4
	18					
	19				18.9 Box 6 (CONT)	DEP 19.4
	20		(CONT)			Pull #4 (CONT)

| | | PROJECT GALLIPOLIS LOCK/DAM | | | | INSTALLATION ORH-LD | | | |

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS/SLS		Box 6	Pull #4
	21					START 12:20
	22					END 12:55
						TIME 35min
	23				23.7	DRL 35min
						RAN —
	24				Box 7	REC 8.5
	25					LOSS 0.9
						UNACC 0.7
	26					
469.8	27				26.8	T/DEP 26.8
			ICL			DEP 27.4
	28				Box 8	Pull #5
			R.be., s.-m.h, w/slt			START 1:07
	29					END 1:43
			PTgs 0.3 L.C. btwn			TIME 36min
	30				30.6	DRL 36min
	31		26.8 & 34.4			RAN —
						REC 7.3
	32				Box 9	LOSS 0.3
						UNACC 0.3
	33					
	34					
					34.4	T/DEP 34.4
	35					DEP 34.9
	36				Box 10	Pull #6
						START 1:55
	37					END 2:14
						TIME 19min
	38					DRL 19min
458.0			Bottom Hole.		38.6	RAN —
	39					REC 3.8
						LOSS 0.4 T/DEP 38.6
	40					UNACC 0.4 DEP 37.4
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

10. SIZE AND TYPE OF BIT 4 Y 5 ½"

2. LOCATION (Coordinates or Station) mono L-29 STA 1+75 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W. G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) L-29/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

5. NAME OF DRILLER STEVE FRY

14. TOTAL NUMBER CORE BOXES 10

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/30/89 COMPLETED 1/30/89

7. THICKNESS OF OVERBURDEN ∅ 496.7

17. ELEVATION TOP OF HOLE 496.7

8. DEPTH DRILLED INTO ROCK 39.9

18. TOTAL CORE RECOVERY FOR BORING 39.4

9. TOTAL DEPTH OF HOLE 457.3

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.7			SANDSTONE			Pull #1
	1		LT. GR., M.H.-H, M-C.GR			START 7.47
	2		BKN, PN. 0.2 SPACING FLAGGY			END 7.58 TIME 11 min
	3		0.0-2.8, FEW OCC CLAYEY		1	DRL 11 min RAM 4.9
	4		STRINGERS + FRAG THROUGHOUT		3.8	REC 4.9 LOSS 0
	5					UNACC 0 DEP + T/DEP 4.9
490.7	6		SANDSTONE		2	Pull #2 START 8.05 END 8.14
	7		LT. GR., -GR, M.H, F-VE F. GR. CLS, GR. S. SH 6.0-6.9		7.4	TIME 19 min DRL 19 min
	8		SLT ABOVE 7.0', ANG PN W CL COATING ∠60 (JOINT)			RAM 4.7 REC 4.3
487.5	9		8.2-8.4			LOSS 0.4 UNACC 0.9
			SLS		3	DEP 9.0 T/DEP 9.6
	10		5P, S-M.H, SH, ANG, PN, 30° W/S LK 7.9-10.0, 10.1-10.3			Pull #3
	11					
485.0					11.4	START 8.56
	12		CLS			END 9.30 TIME 39 min
	13		GR, S, SH, SEVERLY BKN 12.4-12.7 W/ LC.		4	DRL 34 min RAM 9.7
483.2			SLS			REC 8.7
	14		GR. S-M.H., SH, BKN PN. 3			LOSS 1.0
	15		SPACING, SEVERLY BKN 14.2-14.5 15.1-15.3, CLS 16.6-17.0 GR, S. SH,		15.3	UNACC 1.0
	16					
479.7	17		SANDSTONE		5	
	18		GR, M.H., F-VE F. GR. CL SEAM			
477.7	19		SLS			DEP 19.5 T/DEP 19.3
	20		CGL		19.7 6	Pull #4

DRILLING LOG (Cont Sheet)		ELEVATION TOP OF HOLE 996.7				Hole No. L-24/1	
PROJECT GALLIPOLIS LOCK+DAM			INSTALLATION ORH-CD				SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS	% CORE RECOV	BOX/SAMPLE	REMARKS
	20		SLS			PULL #4
	21		gR. S-MH, Sh, bkn.pN,		6	START 9:40
	22		0.3 SPACING			END 10:10
						TIME 30 min
						DRL 30 min
473.5	23					RAN 10.0
			CLS		23.6	REC 9.7
	24		gR. S. Sh, severly bkn			LOSS 0.3
	25		25.2 - 25.6		7	UNACC 0.3
470.6	26					
	27		ICL			
			l-BR, S-MH, occ AR4		27.3	
	28		PN w/ SLK, Sh, occ			
	29		mottled w/ gR + gN:gR.			DCP 29.2
	30		gR + CLAyey ABOVE 27.3		8	T/DCP 29.3
	31		severly BKN 27.3 - 27.4		31.1	PULL #5
	32		28.2 - 29.3, 30.5 - 31.4			START 10:30
						END 11:12
	32					TIME 42 min
	33				9	DRL 42 min
	34					RAN 6.8
	35				34.5	REC 6.0
						LOSS 0.8
						UNACC 0.8
	36					DCP + T/DCP 36.1
	37					PULL #6
	38					START 23:30
						END 23:51
						TIME 21 min
						DRL 21 min
457.3	39		Bottom Hole		39.9	RAN 3.3
	40					REC 3.3 DCP 39.9
	41					LOSS 0
	42					UNACC 0
	43					

ENG FORM 1836-A JUN 67 (ER 1110-1-1801) GPO 1966 OF - 628 - 803

PROJECT GALLIPOLIS LOCK+DAM	HOLE NO. L-24/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORN-CO	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO L-24 STA 1+40 B

3. DRILLING AGENCY W. G JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-29/2

5. NAME OF DRILLER Dowell Norris

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN ∅ 496.5

8. DEPTH DRILLED INTO ROCK 40.3

9. TOTAL DEPTH OF HOLE 456.2

10. SIZE AND TYPE OF BIT 4 x 5.5"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B.-57 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/30/89 COMPLETED 1/30/89

17. ELEVATION TOP OF HOLE 496.5

18. TOTAL CORE RECOVERY FOR BORING 40.3

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.5			SANDSTONE M-c.g, m.h, m.gr		Box 1	Pull #1+2 START 20:55 END 2/20 TIME 25min DRL 25min RAN 7.8 REC 6.3 LOSS 1.5 UNACC 1.5
	1					
	2					
493.0	3				3.6	
	4		CLS m.-dk.gr, s-m.h., shy bkn w/ TR.gr cl 3.5 SS.lens 5.2 -5.4 UBkn w/ TR gr cl cor & lsl c 5.4 -7.8		Box 2	
	5					
	6					
	7					
488.5	8		SANDSTONE shy, f.g. s.-m.h, m.dk gr grading into		8.3	DEP 7.8 Pull #3 START 21:45 END 22:00 TIME 15min DRL 15min RAN 12.4 REC 4.5 LOSS .4 UNACC .4
	9				Box 3	
486.3	10		CLS s.-m.h, m-dk.gr w/ SLS NODE inch.s, TR cl. cor @ 10.2 bkn 11.3 117 w/0.1 L.C bkn w/slk 12.0-13.0 m.h.sls. se @ 14.4 12.6 ss lens 15.3 -15.9 UE bkn w/slk. 16.3-17.2		11.9	DEP 12.4 Pull #4 START 22:00 END 22:15 TIME 15min DRL 15min RAN 17.6 REC 5.2 LOSS 0 UNACC 0
	11					
	12					Box 4
	13				Box 4	
	14					
	15				15.3	
	16				Box 5	
479.3	17					
	18		SANDSTONE shy, f.g. m.h, m.gr hr. sl. wea, JT. 12.6-18.6 gr. el. coa, near hor.ptg. @ 18.4 vert. owen ptg 19.0 19.9 bkn. cl cor hor		18.9	DEP 17.6 Pull # START 22:30 END 22:45 TIME 15min (cont)
	19				Box 6	
476.7	20				cont	

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PROJECT			INSTALLATION		SHEET 2
GALLIPOLIS LOCK & DAM			ORH-CD		OF 2 SHEETS

| ELEVATION | DEPTH | LEGEND | CLASSIFICATION OF MATERIALS (Description) | % CORE RECOVERY | BOX OR SAMPLE NO. | REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) |
a	b	c	d	e	f	g
	20		PT9 @ 19.4 : 6kN, TRANS 30 19.4-20.1			PULL #4
	21				Box 6	DRL 15 min
			CLS/SLS			RAN 22.9
	22		INTERBDD, m.-dk.gr.s			REC 5.3 UNACC Ø
					22.4	LOSS Ø
	23		M.H OCC SLY			DEP 22.9
					Box 7	PULL #5
	24					START 23:05
						END 23:20
	25					TIME 15 min
						DRL 15 min
470.5	26					RAN 28.1
			ICL			REC 5.2
	27				Box 8	LOSS Ø
			S-m.-i, gr.-e.br.			UNACC Ø
	28					DEP 28.1
			OCC bkn. w/slk			PULL #6
	29					START 7:40
					29.7	END 7:55
	30					TIME 15 min
					Box 9	DRL 15 min
	31					RAN 32.6
						REC 4.5
	32					LOSS Ø
						UNACC Ø
	33				32.6	DEP 32.6
						PULL #7
						START 805
	34				Box 10	END 8:25
						TIME 20 min LOSS Ø
	35					DRL 20 min UNACC Ø
						RAN 35.4
						REC 2.8
	36				36.1	DEP 35.4
						PULL #8
	37					START 8:40
						END 9:19
	38				Box 11	TIME 39 min
						DRL 39 min
	39					RAN 40.3
						REC 4.9
456.2	40		BOTTOM HOLE			LOSS Ø
						UNACC Ø
	41				40.3	DEP 40.3
	42					
	43					
	44					

ENG FORM 1836-A   (ER 1110-1-1801)   GPO 1900 OF-628-603

PROJECT		HOLE NO.
GALLIPOLIS LOCK & DAM		L-24/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 4 V 5½"

2. LOCATION (Coordinates or Station) Mono L-25 STA 1+23 B

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL.

3. DRILLING AGENCY W. G. JAGUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

4. HOLE NO. (As shown on drawing title and file number) L-25/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A — UNDISTURBED N/A

5. NAME OF DRILLER STEVE FRY

14. TOTAL NUMBER CORE BOXES 11

6. DIRECTION OF HOLE ☒VERTICAL ☐INCLINED ____ DEG. FROM VERT.

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/31/89 COMPLETED 1/31/89

7. THICKNESS OF OVERBURDEN Ø 496.6

17. ELEVATION TOP OF HOLE 496.6

8. DEPTH DRILLED INTO ROCK 39.5

18. TOTAL CORE RECOVERY FOR BORING 39.5

9. TOTAL DEPTH OF HOLE 457.1

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6			SANDSTONE			PULL #1
	1		M-C.g., m.H., m. gR., T Bdd.			START 1:00
			Closely spaced pTgs w/o.1L.C			END 1:14
494.7	2				1	TIME 14min
			ICL			DRL 14min
	3		MoTTed R.b., s.-m.h.			RAN —
			V.S. gR.ch. 1.9-2.9.o5LC		3.6	REC 4.2
492.8	4		gRADING iNTO CLS			LOSS 0.1
			M.DK.gR., S.-m.h bKN			UNACC 0.1 T/DEP 4.3
			4.3-5.1 w/o.1L.C			DEP 5.0
491.5	5					PULL #2
			SLS		2	START 1:36
	6		m.dk.gR., S.-m.h. gRAding			END 1:43
			chy-SA gRAding iNTo			TIME 13min
489.8	7		SANDSTONE		7.3	DRL 13min UNACC 0.1
			CLY, F.g., m.H, m.gR.			RAN —
	8					REC 4.2
						LOSS 0.1 T/DEP 8.3
487.7	9		SLS		3	DEP 9.0
			Sa. s-m.H, m.-dk.gR., pTs			PULL #3
486.6	10		SHY gRADING			
			CLS/SLS		10.9	START 1:53
	11					END 2:27
			SHY interbdd, S.-m.H.,			TIME 34min
	12		m.-dk.gR., w/ thin			DRL 34min
			gR.ch. SE: Closely.		4	RAN —
	13		SPACED, HoR.pTs. w/			REC 8.9
			occ TR.gR.ch. coR &			LOSS 0.3
	14		Fld. O.3 L.C. btwn			UNACC 0.3
			10. ' 16.2		14.6	
	15					
480.9	16				5	
479.6	17		SLS S.-m.H, m.gR. gRAding			
			SANDSTONE			
478.9			SHY, F.g., m.H, m.gR TR.gR.			T/DEP 17.7
	18		ch.coR HoR contact @17.0		18.4	DEP 18.4
			SLS		6	PULL #4
	19		Interbdd w/ CLS.:		cont	START 2:42
	20		(coNT)			END 3:18 (coNT)

DRILLING LOG (Cont Sheet)	ELEVATION TOP OF HOLE 496.6					Hole No. L-25/1
PROJECT Gallipolis Lock & Dam			INSTALLATION OCH-CD			SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS			Pull #4
	21		s.-m.h., shy. midk.gr,		6	Time 36 min
			occ, gr.cl. cor & fla			DRL 36 min
	22		Hor. ptg: moss. SLS			RAN —
			22.8-24.1: grading		22.4	REC 9.4
	23					Loss Ø
						UNACC Ø
	24					
					7	
471.5	25					
	26		ICL		26.1	
	27		MOTTED - R.br., s.-m.h,			T/DEP 27.1 DEP 27.4
	28		bkn. w/ SLK. R.br.		8	Pull #5
	29		STARTing @ 29.0 1.2			START 3:50
			L.C. btwn 27.1 & 36.8			END 4:32
	30				29.8	TiME 42 min
	31					DRL 42 min RAN 9.7
	32				9	REC 8.5 Loss 1.2
	33				33.5	UNACC 1.2
	34					
	35					
	36				10	
	37					DEP 36.7 T/DEP 36.8
	38				37.8	Pull #6 START 5:15
	39				11	END 5:32 TiME 17 min
457.1			Bottom Hole		39.5	DRL 17 min T/DEP 39.5 DEP 39.7
	40					RAN 2.7
	41					REC 2.0
	42					Loss 0.7
	43					UNACC 0.7
	44					

ENG FORM 1836-A JUN 67 (ER 1110-1-1801) GPO 1980 OF - 628 - 003	PROJECT Gallipolis Lock & Dam	HOLE NO. L-25/1

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK & DAM

2. LOCATION (Coordinates or Station) MONO L-25 STA 1+20B

3. DRILLING AGENCY W. G. TAGGES

4. HOLE NO. (As shown on drawing title and file number) L-25/2

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE ☑VERTICAL ☐INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.4

8. DEPTH DRILLED INTO ROCK 40.4

9. TOTAL DEPTH OF HOLE 456.0

10. SIZE AND TYPE OF BIT 4 YS.S"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 10

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/31/89 | COMPLETED 1/31/89

17. ELEVATION TOP OF HOLE 496.4

18. TOTAL CORE RECOVERY FOR BORING 40.4

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE m.c.g, m.h., m.gr. BKN 0.0-2.0 w/0.4 L.C (mech)		1	Pull #1 START 9:40 END 9:55 TIME 15 min DRL 15 min RAN — REC 1.6 LOSS 0.4 UNACC 0.4 DEPT/DEP 2.0
492.6	4		SLS S: m.h, SA, m.dk.ge w/R.s.shy SS. Lamt inchs: bkn w/slk 3.8-9.5: Bkn/frac SS in SLS mNtrix 4.5-5.5		2	Pull #2 START 10:00 END 10:20 TIME 20 min DRL 20 min RAN — REC 5.2 LOSS Ø UNACC Ø
490.7	5		CLS S.-m.h, m dk.gr, slk			
489.2	7					T/DEP 7.2 DEP 2.4
486.9	8 / 9		SS/SL depositional beechns. SS bkn wea., o frac SLS bkn slk 7.2-9.0, Sa 9.0-9.5		3	Pull #3 START 10:30 END 10:50 TIME 20 min DRL 20 min RAN — REC 2.7 LOSS Ø UNACC Ø T/DEP 9.9
	10 / 11		CLS/SLS S: m.h., m dk.ge, mass-m-brkl. w/occ shy ptg.		4	DEP 10.0 Pull #4 START 11:00 END 11:20 T/DEP DEP 12.4 TIME 20 min DRL 20 min RAN — REC 2.4 LOSS Ø UNACC Ø
	12 / 13					T/DEP 13.2 Pull #5 START 11:30 END 11:57 UNACC Ø TIME 27 min DRL 27 min RAN — REC 0.9 LOSS Ø DEP 17.0
479.5	14 / 15 / 16				5	
477.4	17 / 18		SLS Sa, A.9., m.h, m.dk.ge. w/m. spaced, hor ptgs core spin @ 16.2 Grading into		6 (cont)	T/DEP 17.5 START 8:36 LOSS Ø END 8:10 UNACC Ø DEP 18.1 TIME 34 min DRL 34 min RAN — REC 9.3
	19 / 20		CLS S.-m.h., m dk.gr, shy occ (cont)			Pull #7 START 13:20

DRILLING LOG (Cont Sheet)				ELEVATION TOP OF HOLE 496.4			Hole No. L-25/2	

PROJECT Gallipolis Lock + Dam				INSTALLATION ORH·CD			SHEET 2 OF 2 SHEETS	

ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV. ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
a	b	c	d	e	f	g
	20		CLS (cont)		6	END 13:40 / TIME 20 min / DEL 20 min
	21		S/S. LENS ½' @ 20.5.		2.3	RAN — / REC 4.3 T/DEP 21.8 / LOSS Ø / UNACC Ø DEP 22.9
	22					PULL # 8
	23				7	START 13:50 / END 14:15 / TIME 25 min / DEL 25 min
	24					RAN —
470.9	25				25.0	REC 4.2 / LOSS Ø / UNACC Ø
	26		ICL			T/DEP 26.0 DEP 26.3 PULL #9
	27		S. -m.h, m.gr. - R.br.		8	START 14:30 / END 14:50 / TIME 20 min / DEL 20 min
	28		SLK. : bkn to 28.0		28.7	RAN — / REC 5.7 / LOSS Ø / UNACC Ø
	29		becoming r.br @ 28.			
	30		bkn throughout l. ≠ LC.		9	
	31		btwn 13.7 ' ≠ 0.4			T/DEP 31.2 DEP 31.4 PULL #10
	32				32.3	START 22:50 / END 23:15 / TIME 25 min / DEL 25 min
	33					RAN 9.2
	34				10	REC 7.8 / LOSS 1.4 / UNACC 1.4
	35					
	36				36.0	
	37					
	38				11	
	39					
456.0	40		Bottom Hole		40.4	DEP ≠ T/DEP 40.4
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67 (ER 1110-1-1801) GPO 1988 OF - 628-663	PROJECT Gallipolis Lock; Dam	HOLE NO. L-25/2

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO L-26 STA 0+80 B

3. DRILLING AGENCY W. G. Jagues

4. HOLE NO. (As shown on drawing title and file number) L-26/1

5. NAME OF DRILLER STEVE FRY

6. DIRECTION OF HOLE
☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.6

8. DEPTH DRILLED INTO ROCK 33.9

9. TOTAL DEPTH OF HOLE 463.2

10. SIZE AND TYPE OF BIT 4/5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/1/89 COMPLETED 2/2/89

17. ELEVATION TOP OF HOLE 796.6

18. TOTAL CORE RECOVERY FOR BORING 32.7

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
796.6			SANDSTONE			Pull #1
495.3	1		m.-cs., m.h, m.gr. thin bdd		Box 1	START 9.45
						END 9.55
	2		Icl			Time 10 min
			motted - R.br, s -m.h,			DEL 10 min
	3		slt ve.s @ contact			RAN —
					3.7	REC 5.0
	4					LOSS ∅
						UNACC ∅
	5				Box 2	DEP 5.0 T/DEP 9.5
491.0						Pull #2
	6		SANDSTONE			START 10:05
			slty, m.h, m.gr, f.g.			END 10:18
	7		mass grading into			Time 13 min T/DEP 7.2
					7.8	DEL 13 min
	8					RAN —
						REC 2.4
487.7	9		Cls/Sls		Box 3	LOSS ∅
						UNACC ∅
	10		Interbdd, s. -m.h., m-		10.7	DEP 10.2
	11		dk.gr.: closely spaced			Pull #3
			hor slty ptgs w/tr			
	12		gr. cl. coa & se.		Box 4	START 10:31
						END 11:00
	13		slty 8.9-10.2: blkn w/slk			Time 29 min
			11.7 -12.3 : 0.6 lc btwn			DEL 29 min
	14		10.7 & 16.0 sa lens 16.9-		13.5	RAN —
			17.8, mostly cls below			REC 8.8
	15		17.8: R.br Icl lens			LOSS 0.6
			20.2 -20.7 : 21.6 -21.9			UNACC 0.6
	16		0.7 lc btwn 22.9 & 25.0		Box 5	
			w/core spin @ 23.0			
	17					T/DEP 16.0
						DEP 17.0
	18					Pull #4
					18.4	START 23:5
	19				Box 6	END 23:35
					CONT	Time 28 min
	20					(CONT)

ELEVATION TOP OF HOLE	496.6				Hole No.	L-26/1

PROJECT Gallipolis Lock & Dam	INSTALLATION ORH-CD					SHEET 1 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS/SLS			Pull #4
	21				6	
	22				22.1	DRL 20 min · RAN — · REC 2.3 · LOSS 0.9 · UNACC 0.9
	23					
	24				7	
471.6	25					T/DEP+DEP 25.0
	26		ICL · gr.br.-r.br, s-m.h, slk		26.3	Pull #5 · START 7:25
	27		1.1 L.C btwn 25.0 & 32.7			END 8:25 · TIME 60 min
	28				8	DRL 60 min · RAN 8.7
	29					REC 6.6
	30				29.8	LOSS 1.1 · UNACC 1.1
	31				9	
	32					
463.9	33		Bottom Hole		32.7	T/DEP 32.7 · DEP 33.4
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A
JAN 67 (ER 1110-1-1801)   GPO 1980 OF - 628-503

PROJECT Gallipolis Lock & Dam	HOLE NO. L-26/1

Hole No. L-26/2

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT GALLIPOLIS LOCK + DAM

2. LOCATION (Coordinates or Station) MONO L-26 STA 0+81A

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) L-26/2

5. NAME OF DRILLER DAVE HARPER

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.4

8. DEPTH DRILLED INTO ROCK 33.9

9. TOTAL DEPTH OF HOLE 462.5

10. SIZE AND TYPE OF BIT 4 X 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/1/89 COMPLETED 2/1/89

17. ELEVATION TOP OF HOLE 496.4

18. TOTAL CORE RECOVERY FOR BORING 32.8 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.4			SANDSTONE			PULL #1
	1		GR, M.H, M.C.GR, BKN PN			START 7:30
			.2 SPACING, ARAGGY, FE STAIN		1	END 7:45
	2		0.0 - 1.1, NUM CLAYEY			TIME 15 min
493.7			THIN STRINGERS 2.2-2.5			DRL 15 min
	3		CLS			PAN 3.6
			GR, S, SH, VE.S. FATTY, CL,		3.6	REC 3.1 T/DCP 3.6
	4		2.5-2.6, mech BKN 3.6-3.8			LOSS 0.5
491.9						UNACC 0.5
	5		SANDSTONE			DCP 5.0
			GR, MH, F-VE.F.GR.		2	PULL #2
	6		SLT CML. CEM 7.7-7.7			START 7:57
	7					END 8:11
						TIME 14 min
488.7					7.7	DRL 14 min T/DCP 7.7
	8		SLS			PAN 4.1 DCP 8.2
					3	REC 3.5
	9		GR, S-M.H., SH BKN PN			LOSS 0.6
	10					UNACC 0.6
			0.3 SPACING, OCC CLAYEY			
	11		REDRILLED ARCN CSM			PULL #3
					11.5	START 8:23
	12		CORE DIA : 8.5-8.6			END 9.07
						TIME 44 min
	13		CL : 8.0-8.3, 9.9-10.3		4	DRL 44 min
	14		Sa 15.7-18.3			PAN —
						REC 7.0
	15				15.2	LOSS 0.5 T/DCP 15.2
						UNACC 0.5 DCP 15.6
	16					PULL #4
					5	START 9.20
	17					END 9.37
						TIME 17 min
	18					DRL 17 min
					18.8	PAN 3.6 T/DCP 18.6
	19				6 con	REC 3.6
						LOSS Ø DCP 19.9
	20		(CONT)			UNACC Ø

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT GALLIPOLIS LOCK + DAM HOLE NO. L-26/2

PROJECT						SHEET 2
GAllipolis Lock + DAm			INSTALLATION OBH-CD			OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		6	Pull #5
	21					
						START 10:05
979.2	22					END 10:38
			CLS		22.6	TimE 33min
	23					DRL 33min
			gR, S, Sh, BKn pln			PAN 8.7
	24					REC 8.7
			0.2 SPACing		7	LOSS Ø
971.1	25					UNACCØ
	26		ICL		26.5	
	27		scc mottled, w/gn.gn.gR.			T/DEP22.5
	28		dk.gn Above 28.0, k-bR		8	DEP22.9
	29		below, CL Above 30.5			Pull #6
						START 10:59
	30		sh below 30.5 securly Bkn		30.2	END 11:23
	31		25.6·26.0, 27.5·28.3, 28.7			TimE 29min
					9	DRL 29min
	32		28.9 ·29.9 ·29.6, 30.2-30.3, 32.5			PAN 5.3
			- 32.8			REC 5.3
463.6			Bottom Hole		32.0	LOSS Ø
	33					UNACCØ
						T/DEP32.8
	34					
	35					DEP 33.9
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A JUN 67	(ER 1110-1-1801)	GPO 1960 OF - 628 - 603	PROJECT GAllipolis LocKtDAm	HOLE NO. L-26/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock+Dam	10. SIZE AND TYPE OF BIT 4x5½"
2. LOCATION (Coordinates or Station) MONO L-27 STA 0+52B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L
3. DRILLING AGENCY W.G. JAQUES	12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) L-27/1	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER STEVE FRY	14. TOTAL NUMBER CORE BOXES 9
	15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	16. DATE HOLE	STARTED 2/1/89	COMPLETED 2/1/89

7. THICKNESS OF OVERBURDEN 0 496.2	17. ELEVATION TOP OF HOLE 496.2
8. DEPTH DRILLED INTO ROCK 32.6	18. TOTAL CORE RECOVERY FOR BORING 32.4 %
9. TOTAL DEPTH OF HOLE 463.6	19. SIGNATURE OF INSPECTOR LMD

ELEVATION 496.2 a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.1			SANDSTONE m-c.g., m.h., m.gr.			Pull #1
	1		ICL			START 4:53
			S. Rb - mottd, w/slk			END 5:07
493.9	2				1	TiME 14.min
						DRL 14min
	3		SANDSTONE m-c.g., m.h., m.gr. thin			RAN —
			bdd.			REC 5.1
492.1	4					LOSS —
			ICL			UNACC —
	5		S, r.br., ve.bkn, w/slk		3.8	T/DEP 4.8 DEP 5.1
	6		ve.s 5.1-8.2		2	Pull #2 START 5:35
	7				7.3	END 5:45 TiME 10min
						DRL 10min
488.0	8					RAN
487.7			CL			REC 4.8
	9		S.gr		3	LOSS 0
			CLS			UNACC 0 T/DED 8.6 DEP 9.8
	10		m-dk.gr, s-m.h., isa. Lens @ 9.6-9.8 & 9.9-10.1		10.8	
	11		R.br w/slk 10.8-11.6 grading shy w/depth			Pull #3
	12		w/closely spaced shy, hor ptgs w/occ tr.			START 6:21 END 6:50
	13		of gr. cl coa : shi sa 13.0 - 13.7, bkn along		4	TiME 29min DRL 29min
	14		ha, irr frac 13.0-13.6 : grading into		14.6	RAN — REC 8.2
	15					LOSS —
480.6						UNACC —
	16		SANDSTONE shy, F.g. m.h, m.gr.ve,		5	Pull #4 START 7:10
478.8	17		shy Len 16.1-16.6 grading into			END 7:25 TiME 15min
			SLS			DRL 15min DEP 17.9
478.1	18		cly-s-m.h., m.-dk.gr pts shy.		18.1	RAN —
			CLS/SLS		6	REC 3.1
	19		Interbdd, s-m.h., m dk.gr. w/closely spaced		(CONT)	LOSS — UNACC —
	20					CONT

						SHEET 2 OF 2 SHEETS

PROJECT 6Allipolis Lock & DAM INSTALLATION ORH-CD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20					
	21		CLS/SLS		6	T/DEP & DEP 21.0
	22		Hor, shy ptgs. occ w/tz		21.4	PULL #5
			gR cl coa/fold			
473.0	23				7	START 8:20
	24		ICL			END 8:46
						TIME 26min
	25		R.br, s.-m.h, bkn.w/			DRL 26min
					25.2	RAN —
	26		SLK 1.7L.C. bTwN			REC 6.9
						LOSS 1.7
	27		21.0 & 29.6 0.8LC			UNACC 1.7
	28		bTwN 29.6 & 32.4		8	
	29					DEP 29.0
	30				30.2	PULL #6 T/DEP 29.6
						START 9:08
	31					END 9:20
					9	TIME 12min
	32					DRL 12min
463.8			Bottom HOLE		32.4	RAN —
	33					REC 2.0 T/DEP 32.4 DEP 32.6
	34					LOSS 0.8
	35					UNACC 0.8
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1980 OF - 628-603 PROJECT 6Allipolis Lock & DAM HOLE NO. L-27/1
JUN 67

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CP	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam	10. SIZE AND TYPE OF BIT 4 x 5½L

2. LOCATION (Coordinates or Station) Mono L-27 STA 0+98B	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W. G. Jaques	12. MANUFACTURER'S DESIGNATION OF DRILL B.-53 Mobile

4. HOLE NO. (As shown on drawing title and file number) L-27/2	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER Dave Harper	14. TOTAL NUMBER CORE BOXES 9

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A
	16. DATE HOLE	STARTED 2/2/89	COMPLETED 2/2/89

7. THICKNESS OF OVERBURDEN 0 496.9	17. ELEVATION TOP OF HOLE 496.9

8. DEPTH DRILLED INTO ROCK 53.9	18. TOTAL CORE RECOVERY FOR BORING 32.6 %

9. TOTAL DEPTH OF HOLE 462.5	19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SANDSTONE			Pull #1
	1		LT.gr, M-H.H, M-C.gr.			START 8:45
			Bkn pn. 0.3 spacing, occ Thin		1	END 8:55
	2		cl stringers 2.9-3.2, F.gr.			Time 10min
			below 3.2, Bkn 0.0-0.3			DRL 10min
	3					RAN 4.3
492.8				3.6		REC 4.2
	4		CLS			Loss 0.1
			gr. S. Sh.			UNREC 0.1 T/D-P 4.3
491.5	5					DEP 5.0
			SLS			
	6		gr m.H., SA, SS. seam, m.H.,		2	Pull #2
			F.gr. 4.9-5.3 Ang. frac,			START 9:04
489.6			45° 5.4-4.7 scurpl, Bkn	6.8		END 10:13
	7		6.3 - 6.8			Time 69min
			SANDSTONE			DRL 69min
	8		gr, M.H, F.gr, slt, calcem.		3	RAN 5.6
488.1			below 7.6			REC 5.0
	9		- CLS			Loss 0
			gr-dkgr, S.H, SA.			UNREC 0 DEP +
			gr. 8.3-9.3, 11.6 12.5/dkgr.			T/D-P 9.3
	10		mottled w/lt-br tyngr.		10.4	
			9.3-11.6, cl above 9.3			
	11		scurfly Bkn, nicel 9.3-			
			9.6, 10.8-11.3			Pull #3
	12				4	
483.9						START 10:20
	13		SLS			END 11:07
						Time 47min
	14		gr, S, Sh, scurdly		14.1	DRL 47min
						RAN 6.9
	15		Bkn 18.8 -19.3-20.6-20.8			REC 6.2
						Loss 0.7
	16		CLS gr.S.Sh 19.3-20.0		5	UNREC 0.7
	17		21.2-21.9			
	18				18.2	
	19				6	DEP 18.9
					cont	Pull #4
	20		(CONT)			(CONT)

PROJECT Gallipolis Lock + Dam	HOLE NO. L-27/2

ELEVATION TOP OF HOLE	496.4	Hole No. L-27/2

PROJECT	INSTALLATION	SHEET 2
GALLIPOLIS LOCK + DAM	ORD-CD	OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS		6	Pull #4
	21					START 11:18
	22				21.7	END 11:47
						TIME 29min
473.5	23					DPL 29min
			CLS		7	RAN 8.9
	24		SL., S., Sh.,			REC 8.5
						LOSS 0.4
						UNAC 0.4
471.1	25				25.3	T/DCP 25.1
	26		ICL			DCP 25.5
			R.BR, S-M.H, Sh,			Pull #5
	27				8	START 12:35
			OCC SLK, dK Above			END 13:10
	28					TIME 35min
			29.0, R-BR Below 29.0		29.0	DPL 35min
	29					RAN 7.5
						REC 6.5
	30					LOSS 1.0
						UNAC 1.0
	31				9	
	32					
463.8			Bottom Hole		32.6	T/DCP 32.6
	33					
	34					DCP 33.9
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

PROJECT	HOLE NO.
GALLIPOLIS LOCK + DAM	L-27/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono L-28 STA 0+25 B

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) L-28/1

5. NAME OF DRILLER Dave Hardee / Steve Fry

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 0 496.6

8. DEPTH DRILLED INTO ROCK 33.3

9. TOTAL DEPTH OF HOLE 463.3

10. SIZE AND TYPE OF BIT 4 x 5½

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/1/89 COMPLETED 2/1/89

17. ELEVATION TOP OF HOLE 496.6

18. TOTAL CORE RECOVERY FOR BORING 33.3 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.6			SANDSTONE M.c.g., m.h, w.gr Thin bdd			PULL #1 START 13:00 END 13:15 TIME 15min
495.3	1				Box 1	DRL 15min RAN —
	2		CLS S.-m.h, m.dk.gr., shy occ.shy, 0.1.cl. 1.3-1.9 :ve bkn 3.2-4.7 w/0.6 L.C.: PTgs. occ slk: ha bkn slk. Fraces 4.7.63			REC 4.1 LOSS 0.6
	3				3.9	UNACC 0.6
	4					
	5					T/DEP 4.7 DEP 5.0
	6				Box 2	PULL #2 START 13:28 END 13:37 TIME 9min
490.3						DRL 9min RAN —
	7		ICL S.-m.h., R.br. occ. ve. bkn, slk 0.5 L.C b twn 6.3 : 8.8: S.20.10.2- 10.5 becoming gr @ 11.0		8.0	REC 3.6 LOSS 0.5 T/DEP 8.8
	8					UNACC 0.5 DEP 9.3
	9				Box 3	PULL #3
	10					
	11					START 13:50 END 14:20 TIME 30min
	12				12.1	DRL 30min RAN —
489.0	13		CLS shy S.-m.h., m.dk.gr. 0.4 s.gr.cl. 12.6-13.0.ve bkn 13.0-16.0 w/0.6 L.C:sa 16.5-16.8: ve shy 16.8-19.5, gradin Into		Box 4	REC 6.6 LOSS 0.6 UNACC 0.6
	14					
	15					
	16				16.0	T/DEP 16.0
	17				Box 5	
	18					
	19					DEP 18.9
477.1	20		CLS/SLS (CONT)		19.9	PULL #4 (CONT)

ELEVATION TOP OF HOLE 496.6					**Hole No.** L-2811	
PROJECT Gallipolis Lock & Dam			**INSTALLATION** 084-CD			**SHEET** 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV. ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		Cls/sls			Pull #4
	21		Interbdd, s-m.h, m-dk		Box 6	START 14:34
	22		ge. closely spaced hor			END 15:00
			shy ptgs, occ ge.cl cor			TIME 26min
	23		ise: huy (1/2) ge.cl.se			DRL 26min
			starting @ 23.9 huy ge			RAN —
	24		cl 25.3 -25.6		23.6	REC 9.6
	25					LOSS Ø
471.0					Box 7	UNACC Ø
	26		Icl			T/DEP 25.6 DEP 25.9
			s. -m.h, slk, r.br, dk-			Pull #5
	27		br 25.6 -27.0. ue brkn		27.0	START 3:31
			25.6 -26.3, 0.7 L.C. brkn			END 3:58
	28		25.6 : 33.3.			TIME 27min
	29				Box 8	DRL 27min
						RAN —
	30					REC 7.0
						LOSS —
	31				30.7	UNACC —
	32				Box 9	
463.3	33		Bottom Hole		30.3	DEP+T/DEP 33.3
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801)   GPO 1966 OF - 628 - 803

PROJECT Gallipolis Lock & Dam	HOLE NO. L-2811

DRILLING LOG	DIVISION ORD	INSTALLATION OCH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock + Dam

10. SIZE AND TYPE OF BIT 4¹⁄₂ x 5¹⁄₂"

2. LOCATION (Coordinates or Station) MONO L-28 STA 0+218

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

3. DRILLING AGENCY W.G. JAQUES

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

4. HOLE NO. (As shown on drawing title and file number) L-28/1

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A | UNDISTURBED N/A

5. NAME OF DRILLER DAVE HARPER / STEVE FRY

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

16. DATE HOLE STARTED 2/2/89 | COMPLETED 2/2/89

7. THICKNESS OF OVERBURDEN ∅ 496.8

17. ELEVATION TOP OF HOLE 496.8

8. DEPTH DRILLED INTO ROCK 33.4

18. TOTAL CORE RECOVERY FOR BORING 33.4'

9. TOTAL DEPTH OF HOLE 463.4

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc. if significant) g
496.8			SANDSTONE			Pull #1
	1				Box 1	START 13:37
			m.-cg., m.H, m.gr. Thin			END 13:50
	2					TIME 13 min
			bdd 0.0-2.0 0.3 LC btwn.			DRL 13 min
	3					RAN —
			0.0 + 2.0		3.6	REC 9.2
493.1						
492.8	4		CLS S-m-h m-dk gr. SLK PTgs :VE.S.			LOSS 0.3
			SANDSTONE			UNACC 0.3 T/DEP 9.5
	5		SLY, f.g., m.h, m.gr. bkn		Box 2	DEP 5.0
491.3			(:n:ch 9.5-5.5)			Pull #2
	6		SLS/SS			START 13:56
			INTERbdd, s-m.h, m-			END 14:06
	7		dk gr. :VE bkn 5.5-		7.2	TIME 10 min LOSS 0.4
			9.2 w /0.4 L.C. :Sa			DRL 10 min UNACC 0.4
	8		7.6 - 8.4			RAN —
					Box 3	REC 4.3
487.6	9					T/DEP + DEP 9.2
	10		CLS/SLS			Pull #3
			s-m.h, m.-dk.gr. bkn		10.9	START 14:15
	11					END 14:45
			10.8 - 11.2 w /0.3 LC.			TIME 30 min
	12				Box 4	DRL 30 min
			Sa LENS 11.2 - 11.6 m-			RAN —
	13					REC 9.3
			Closely spaced, hor PTgs			LOSS 0.3
	14					UNACC 0.3
			w/TR. hvy .gr. cl. fld		14.8	
	15					
			12.3 - 17.0		Box 5	
	16					
479.8	17					
	18		SANDSTONE Shy, f.g., m.H, m.gr.			
478.0					18.5	DEP 18.9 T/DEP 18.8
	19		CLS		Box 6	Pull #4
	20		(CONT)		CONT	CONT

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT Gallipolis Lock & Dam

HOLE NO. L-28/2

	ELEVATION TOP OF HOLE					Hole No.	L-28/2
		496.8					

PROJECT: GALLipOLis LOCK & DAM

INSTALLATION: ORH-CD

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	PULL #4 START 14:55
	21		occsLy, s-mh, m·dk.gr			END 15:15 TimE 20min
	22		Closely spaced hor, shy ptgs		21.8	DRL 20min RAN —
	23		w/tr.gr. cl. coa /fld slk		Box 7	REC 6.0 LOSS 0.2
	24		PTgs A.2-19.7 :R gr Icl Lens			UNREC 0.2
471.6	25		22.1-22.5 O.JLC btwN 22.5 & 25.0			DEP & T/DEP 25.0
	26		ICL		25.5	PULL #5
	27		R. bR, be.gr, s-m.h., slk		Box 8	START 15.45 END 16:18 TimE 33min
	28					DRL 33min RAN —
	29				29.3	REC 8.4 LOSS 0
	30					UNREC 0
	31				Box 9	
	32					
463.9	33		Bottom HOLE		33.4	T/DEP & DEP 34.4
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1968 OF - 828-603

JUN 67

PROJECT: GALLipOLis LOCK & DAM

HOLE NO.: L-28/2

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT GALLipolis Lock + DAM	10. SIZE AND TYPE OF BIT 4 X 5½"

2. LOCATION (Coordinates or Station) MONO L-29 STA 0+3 A	11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

3. DRILLING AGENCY W. G. JAGUES	12. MANUFACTURER'S DESIGNATION OF DRILL B. 53- MOBILE

4. HOLE NO. (As shown on drawing title and file number) L-29/1	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED N/A	UNDISTURBED N/A

5. NAME OF DRILLER STEVE FRY	14. TOTAL NUMBER CORE BOXES 9

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER N/A

	16. DATE HOLE	STARTED 2/6/89	COMPLETED 2/6/89

7. THICKNESS OF OVERBURDEN Ø 496.1	17. ELEVATION TOP OF HOLE 496.1

8. DEPTH DRILLED INTO ROCK 37.3	18. TOTAL CORE RECOVERY FOR BORING 32.9 %

9. TOTAL DEPTH OF HOLE 462.8	19. SIGNATURE OF INSPECTOR TMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.1			SLS			PULL #1
			GR. S., M.H. SH BKN, Sa			START 3:47
495.1	1		ABOVE .7 + CLAYEY Below .7			END 4:07
			SANDSTONE			TIME 20min
			GR. M.H. F. VE.F. GR. HIGH ANG.		1	DRL 20min
	2		FRAC 1.7-2.1 CAL. cement			RAN 4.6
			1.6-2.5			REC 4.6
493.1	3				3.6	LOSS Ø
			SLS / CLS			UNACC Ø T/DEP4.6
	4					DEP 4.9
			Interbkd. SLS, GR. S. Sh,			
	5				2	PULL #2
			3.0 - 5.3, 6.5 -10.3, 10.5-			START 4:17
	6		11.2, 11.9-12.6, 13.2-12.8.			END 4:32
					7.2	TIME 15min
	7		CLS, GR. S. Sh, 5.3 - 6.5			DRL 15min
	8					RAN 4.3
			10.3 -10.5, 11.2 -11.9, 12.6		3	REC 4.3
	9					LOSS Ø T/DEP 8.9
			13.2, 14.8 -15.0, BKN DN			UNACC Ø
	10					DEP 9.8
			0.2 SPACING Below 9.6			
	11				10.8	PULL #3
			OCC CL cooting, BKN mat			START 4:50
	12					END 5:20
			4.6-5.0, 5.6-5.7, 8.5-8.6, 9.5-9.6		4	TIME 30min
	13					DRL 30min
			14.3, 14.6 CL cootDN 8.2-9.1			RAN 10.2
	14					REC 10.2
			LT R-BR. TINT 10.0-11.3		14.6	LOSS Ø
481.1	15					UNACC Ø
			SLS			
	16		GR. S - M.H. Sh (15.0-15.6)		5	
	17		CLS SEAM 12.9-18.0			
	18		CL below 18.0		18.3	
	19				6 (CONT)	T/DEP 19.1
476.5	20		CLS (CONT)			DEP 19.9

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						SHEET 2 OF 2 SHEETS

DRILLING LOG (Cont Sheet) — ELEVATION TOP OF HOLE **496.1** — Hole No. **L-29/1**

PROJECT: GALLIPOLIS LOCK + DAM

INSTALLATION: ORH-LD

SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS			Pull #9
	21		gr. s. sh, 19.6-22.7, Bu		6	START 5:39
	22		pn occ cl coating, w/spk			END 6:06
473.9			0.1 19.6-20.3, 20.8-22.7		22.7	TIME 32min
	23		SLS			DRL 32min
472.9			gr, s, sh. (22.7-23.9) R-Br			RAN 10.5
			Below 23.9		7	REC 10.5
	24					LOSS 0
	25		ICL			UNACC 0
	26		dk. gr - R.Br., s. sh		26.6	
	27		To clayey, occ slt			
	28		dk. gr. ABOVE 26.6 - R.Br		8	Pull #5
	29		Below		29.6	START 6:35 END 6:51
	30					TIME 16 min DEPT
	31				9	DRL 16min RAN 2.8 TIDEP 29.6
	32					REC 0
463.7			BOTTOM HOLE		32.9	LOSS 0
	33					UNACC TIDEP 32.9
	34					DCP 33.3
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

DRILLING LOG	DIVISION ORD		INSTALLATION ORH-CD	Hole No.	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock+Dam

2. LOCATION (Coordinates or Station) Mono L-29 STA 0+1A

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) L-29/2

5. NAME OF DRILLER Steve Fry

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.8

8. DEPTH DRILLED INTO ROCK 33.5

9. TOTAL DEPTH OF HOLE 463.3

10. SIZE AND TYPE OF BIT 4 X 5 15"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 2/6/89 COMPLETED 2/6/89

17. ELEVATION TOP OF HOLE 496.8

18. TOTAL CORE RECOVERY FOR BORING 33.5

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.8	1		SANDSTONE			Pull #1
			LT.9R, M.H., M-C.9R, Flaggy			START 20:50
	2		Bd, Bkn Pn. 0.1 Spacing		1	END 21:00
494.9			Fe Surface Stain 0.0-0.9			TIME 10min
	3		CLS			DRL 10min
						RAN 5.0
	4		dk 9R-9R, s, sh	3.7		REC 4.8
						LOSS 0.2
	5		dk.9R., 3.0-6.0 ; 9R. 2.9-3.0			UNACC 0.2
						DEP+T/DEP 5.0
	6		6.0-6.8, 9R w/occ mottl/		2	Pull #2
						START 21:10
	7		9N.9R. Below 6.8, Bkn	7.3		END 21:27
						TIME 17min
	8		w/a2 Loss 3.7-5.0, 8.8-9.0			DRL 17min
						RAN 5.1
	9		SLK 6.2, 6.9 6.7 And 7.1-		3	REC 4.2
						LOSS 0.9
486.5	10		7.3 @ 45°			UNACC 0.9
						DCP 9.9 T/0-P 9.8
	11		SLS / CLS			Pull #3
				11.4		START 21:35
	12		Intrbdd. SLS, 9R s. sh.			END 22:15
					4	TIME 40min
	13		w/occ cl ccoating, BKN			DRL 40min
						RAN 10.0
	14		Pn .3 spacing, Bkn 14.6-			REC 9.9
						LOSS 0.1
	15		19.8. securely w/cl coating	15.2		UNACC 0.1
	16		29.2-29.6, cls, 9R.s, sh.,			
	17		11.9-13.2, 18.1-18.7, 22.0		5	
	18		23.5, Sa 16.7-17.3			
	19			19.0	6	
	20		(CONT)		(CONT)	DCP+T/DCP 19.9

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock+Dam   HOLE NO. L-29/2

						SHEET 2 OF 2 SHEETS
PROJECT Gallipolis Lock + Dam			**INSTALLATION** ORH-CD			
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS/GLS			Pull #4
	21		bKN PNS ~0.1 w/thin		6	START 22:30
	22		CL Coating 18.9-22.0, 12.8		22.6	END 22:57
	23		13.2			TIME 27min
						DRL 27min
	24					RAN 9.9
472.2					7	REC 9.9
	25		ICL			Loss Ø
						UNACC Ø
	26		R.BR-dkgr, S, clayey,		26.9	
	27		occ Sh, occ. SLK,			
	28		R.BR. 24.6-25.2 + Below		8	Pull #5
	29		29.9, dkgr. 25.2-29.9			START 23:16
	30		BKN w/poss Loss		29.8	END 23:33
						TIME 17min
	31		25.8-26.1, much 29.9-29.8			DRL 17min
						RAN 3.7
	32		30.8-31.1, 32.1-32.3		9	REC 3.2
						Loss 0.5
	33					UNACC 0.5
463.3			Bottom Hole		33.5	DCP+T/DCP 33.5
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

DCP+ T/DCP 29.8

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DRILLING LOG	DIVISION OCD		INSTALLATION ORN-CD		SHEET 1 OF 2 SHEETS

1. PROJECT
GALLIPOLIS LOCK ¦ DAM

2. LOCATION (Coordinates or Station)
MONO UM9S2 STA 2+53.6 B

3. DRILLING AGENCY
W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) UM6S/1

5. NAME OF DRILLER
DAVID HARPER

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø 496.6

8. DEPTH DRILLED INTO ROCK 32.8

9. TOTAL DEPTH OF HOLE 463.8

10. SIZE AND TYPE OF BIT 4 15/16"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 8

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/31/89 COMPLETED 1/31/89

17. ELEVATION TOP OF HOLE 496.6

18. TOTAL CORE RECOVERY FOR BORING 32.8 %

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
496.6			SANDSTONE			PULL #1
	1		M.C.3., m.h., m.gr.		Box 1	START 8:00
						END 8:13
	2		Thin bdd 0.0-1.5'			TIME 13 min
						DRL 13 min
	3					RAN —
					3.5	REC 4.9
	4					LOSS Ø
492.3						UNACC Ø
491.8			CL S, GR, FAT		Box 2	DEP 5.0 T/DEP 4.9
	5		CLS			PULL #2
	6		S-m.h., m-dk.gr w/slk shy.ptgs : SS LENS 6.5-6.7			START 8:20
						END 8:34
	7		S. gr. cl @ conTacT		7.2	TIME 14 min
489.3						DRL 14 min
	8		SANDSTONE shy, f.g., m.h., m.gr.,			RAN —
			MASS CARB. ptg @ 10.7			REC 4.3
	9		+ 11.0		Box 3	LOSS Ø T/DEP 9.2
	10		Smooth, shi coa, hor ptg @ 11.9			UNACC Ø DEP 9.6
					10.7	PULL #3
	11					START 8:45
484.7					Box 4	END 9:00
	12		CLS			TIME 15 min
	13		shy, s-m.h, m-dk.gr w/m. closely spaced			DRL 15 min
						RAN —
	14		hor ptg.s occ cl coa, : CORESPUN @ 13.6 ¦ 15.1			REC 4.0 T/DEP 13.2
						LOSS Ø
	15		¦ l.l l.c btwn 13.2 ¦ 17.0		14.3	UNACC Ø DEP 14.0
	16				Box 5	PULL #4
						START 9:12
						END 9:30
479.6	17					TIME 18 min
			SANDSTONE			DRL 18 min
	18		Vc. shy, f.g., m.h., m.g., ptg along hor.shy			RAN —
					18.1	REC 6.5
	19		lam @ 18.7 Irr, vc, lcd FRAC 18.7-19.0 grading inTo		Box c	LOSS 1.1
476.8	20		cLS		CONT	UNACC 1.1
						(CONT)

PROJECT Gallipolis Lock ¦ Dam   HOLE NO. UM 6S/1

	ELEVATION TOP OF HOLE				Hole No.	
	496.6				4MGS11	

PROJECT Gallipolis Lock & Dam
INSTALLATION ORH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		CLS		Box 6	DEP+T/DEP 20.8
	21					Pull #5
			Shy, s.-m.h., m.-dkgr.			START 9:50
	22					END 10:33
			w/occ. sts lens & Lam		22.8	Time 43 min
	23					DRL 43 min
			Tr.g & ch. coatings		Box 7	RAN —
	24					REC 6.1
			grading into			LOSS 2.9
	25					UNACC 2.9
	26					
					26.5	
	27					
					Box 8	
	28					
468.1						
	29		ICL			T/DEP 29.3
			R, br, s-m.h., slk			DEP 29.9
	30					Pull #6
			bkn 28.5-29.3 w/2.4			START 11:10 RAN —
	31					END 11:33 REC 4.2
			L.C, bkn 29.3-32.8			Time 23 min LOSS 0.7
	32					DRL 23 min UNACC 0.7
			w/0.7 L.C.			T/DEP 32.8
463.8	33				32.8	
	34					DEP 32.9
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A   (ER 1110-1-1801)   GPO 1900 OF-628-603   APR 67
GPO 1900 OF-628-603

PROJECT Gallipolis Lock & Dam
HOLE NO. 4MGS11

DRILLING LOG	DIVISION ORD	INSTALLATION ORH.CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono. STa 9+25.61 "B"

3. DRILLING AGENCY W. G. Jaques Co

4. HOLE NO. (As shown on drawing title and file number) DMGS/1

5. NAME OF DRILLER Wayne Tice

6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN 496.9

8. DEPTH DRILLED INTO ROCK 32.9

9. TOTAL DEPTH OF HOLE 32.9

10. SIZE AND TYPE OF BIT 4 x 5.5

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL

12. MANUFACTURER'S DESIGNATION OF DRILL B-57

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED NA | UNDISTURBED NA

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER NA

16. DATE HOLE STARTED 1-16-89 | COMPLETED 1/16/89

17. ELEVATION TOP OF HOLE 496.9

18. TOTAL CORE RECOVERY FOR BORING 32.9 %

19. SIGNATURE OF INSPECTOR JeT

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
496.9			SS. ltg. hd., med to c.g., occ. mic., Cal. cem. num. thin cl stringers ! 4.0-4.1			Pull #1 START 13.20 End 13.28 Time 8 Drl 8 Ran 4.7 Rec 4.7 Loss 0 Unacc 0
	1				1	
	2					
	3					
	4				3.8	
	5					T1 & TP 4.7 Pull #2
	6				2	START 13.37 End 14.00 Time 23 Drl 23
	7				7.4	Ran 10 Rec 9.7 Loss 03 Unacc 03
488.9	8		SLS. g mod. hd. s grad. int. bdd. w/ f. gr. ss throughout bk.n. w/ cl. coating 8.0. 8.1, 8.6. 8.7 v.f. g.ss. 8.2. 9.6 12.7 - 13.7 - 15.3. 17.1. 18.4. 19.6		3	
	9					
	10					
	11				11.0	
	12					
	13				4	
	14					
	15				14.7	T1 & TP 14.7 Pull #3
	16				5	START 1420 End 14.40 Time 20 End 20
	17					Ran 9.9 Rec 9.9 Loss 0
	18				18.4	Unacc 0
	19				6 (cont)	(cont)
477.3						

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

| PROJECT Gallipolis Lock & Dam | HOLE NO. DMGS/1 |

PROJECT Gallipolis Lock & Dam			INSTALLATION ORH - CD			SHEET 2 OF 2 SHEETS
ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	21				6	
	22				22.3	
	23					
	24				7	IP 24.2
	25				TI 24.7	
						Pull #4
	26				26.0	START 15.30
						End 15:40
	27					Time 10
						Drl 10
	28				8	Ran 8.9
						Rec 8.9
	29					Loss 0
						unacc 0
466.9	30		SS. lt gr. mod. hd, f. to med. g. mic. cal. cemented: 21.9 -23.8 few. thin small, cl. str. 21.9 - 22.1 sh. seam 26.6 -26.7, 29.4, 29.6-29.7 29.8.		29.7	
	31					
	32				9	
	33					
463.0	34		ICL. dr. gr. s, cl, num. frac. w/slk. r. br. below 32.7		33.5	IP 33.5
	35				TI 34.7	
	36					
	37					

ENG FORM 1836-A JUN 67	(ER 1110-1-1801)	GPO 1990 OF - 628-603	PROJECT Gallipolis Lock & Dam	HOLE NO. DMGS 11

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

2. LOCATION (Coordinates or Station) Mono DLBS-2 / STA 9+25.61 offset 13'

3. DRILLING AGENCY W. G. Jaques

4. HOLE NO. (As shown on drawing title and file number) DLBS/1

5. NAME OF DRILLER WAYNE TICE

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.2

8. DEPTH DRILLED INTO ROCK 34.7

9. TOTAL DEPTH OF HOLE 462.5

10. SIZE AND TYPE OF BIT 4" ISH"

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.SL.

12. MANUFACTURER'S DESIGNATION OF DRILL B-57 Mobile

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 11

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/16/89 COMPLETED 1/16/89

17. ELEVATION TOP OF HOLE 497.2

18. TOTAL CORE RECOVERY FOR BORING 34.7 %

19. SIGNATURE OF INSPECTOR LMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.2			SANDSTONE		Box 1	Pull #1
	1					START 9:15
			M. C. g., m.h., m.gr			END 9:30
	2					TIME 15 min
						DRL 15 min
	3					RAN 5.0
					3.5	REC 4.8
	4					LOSS Ø
						UNACC Ø
	5				Box 2.	DEP 5.0 T/DEP 4.8
491.7			CLS			Pull #2
	6		M.-DK.gR, S.-mh., shy			START 9:40
490.5						END 10:03
	7				7.0	TIME 23 min
			ICL			DRL 23 min
	8		R.bR, S-m.h., ve.bkn.		Box 3.	RAN —
						REC 2.9
	9		O.1 L.C. btwn 6.7+9.4			LOSS 0.1
						UNACC 0.1
	10		grading into cls @		10.2	DEP / T/DEP 9.4
						Pull #3
	11		11.2 . 0.4 LC btwn 9.4 f			START 10:12
					Box 4	END 10:27
	12		12.7			TIME 15 min
						DRL 15 min
484.4						RAN —
	13		SANDSTONE / SLS			REC 2.9
						LOSS 0.4
	14		Interbdd. Sly, fig.,		14.1	UNACC 0.4 T/DEP 12.7
						DEP 14.3
	15		m.h., m.gR, occ., PTS		Box 5.	Pull #4
						START 10:34
	16		Shy in sly AREA			END 10:56
						TIME 17 min
	17		O.1 L.C. btwn 12.7 f 20.3			DRL 17 min
					17.7	RAN —
	18		grading more sa w/dep		Box 6	REC —
						LOSS .1
	19					UNACC .1
	20		(Cont)		(Cont)	

ENG FORM 1836 MAR 71   PREVIOUS EDITIONS ARE OBSOLETE.   (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam   HOLE NO. DLBS/1

PROJECT Gallipolis Lock + Dam				INSTALLATION ORH-CD			SHEET 2 OF 2 SHEETS	
ELEVATION	DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV-ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)		
a	b	c	d	e	f	g		
476.9	20				Box 6	DEP + T/DEP 20.4		
	21		SANDSTONE		21.7	PULL #5		
	22		Shy, flg, m.h., m.gr.		Box 7	START 11:10		
						END 11:35		
	23		w/thin dk.gr shy lam.			TIME 25 min		
						DRL 25 min		
	24		occ ptg along shy, lam.			RAN —		
						REC 9.5		
	25				24.8	LOSS 0		
					Box 8	UNACC 0		
	26							
	27							
	28				28.2			
	29				Box 9			
	30					DEP + T/DEP 29.9		
	31					PULL #		
	32				32.2	START 11:45		
						END 12:16		
	33					TIME 31 min		
						DRL 31 min		
	34				Box 10	RAN —		
						REC 8.4		
	35					LOSS 0		
						UNACC 0		
	36				36.0			
	37				Box 11			
	38							
458.5			Bottom Hole		38.7	DEP + T/DEP 38.7		
	39							
	40							
	41							
	42							
	43							
	44							

ENG FORM 1836-A
JUN 67

GPO: 1968 OF—329-242

PROJECT Gallipolis Lock + Dam	HOLE NO. DLBS11

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DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD	SHEET 1 OF 2 SHEETS

1. PROJECT GAllipolis Lock & Dam

2. LOCATION (Coordinates or Station) MONO DLBS STA 0+63.5B

3. DRILLING AGENCY W. G. JAQUES

4. HOLE NO. (As shown on drawing title and file number) DLBS/2

5. NAME OF DRILLER STEVE FRY / DAVE HARPER

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN @ 497.

8. DEPTH DRILLED INTO ROCK 33.3

9. TOTAL DEPTH OF HOLE 463.7

10. SIZE AND TYPE OF BIT 4 X 5½ "

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L

12. MANUFACTURER'S DESIGNATION OF DRILL B-53 MOBILE

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN | DISTURBED N/A | UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 9

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 1/25/89 COMPLETED 1/25/89

17. ELEVATION TOP OF HOLE 4970

18. TOTAL CORE RECOVERY FOR BORING 33.3

19. SIGNATURE OF INSPECTOR JMD

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
497.0			SANDSTONE		Box 1	Pull #1
	1		M.H., gr bkn, Q7			START 12:40
			CLS-s mH, gr. bkn. sh			END 12:55
	2					TIME 15 min
						DRL 15 min
	3					RAN —
493.6			SANDSTONE	35		REC 3.4
	4					LOSS Ø
			M.H., gr, Py. hA, IRR, FRA		Box 2	UNACC Ø T/DEP 3.9
	5		3.5 - 4.2 0.1 LOSS 3.4 - 4.2			DEP 5.0
						Pull #2
						START 13:05
	6					END 13:15 TIME P 6.2
490.5				6.8		TIME 10 min
	7		CLS			DRL 10 min
			M.H. gr, sh, sh. w/			RAN —
	8		INTERbd SLS LENS		Box 3	REC 2.7
			mech, grinding			LOSS 0.1
	9		1.5 CORE LOSS (1.8)			UNACC 0.1 DEP 8.8
			FROM 6.2 - 14.5			Pull #3
	10		mach grinding 7.7			START 13:27
			To 9.0			END 13:55
	11			10.7		TIME 28 min
						DRL 28 min
	12				Box 4	RAN —
						REC 6.8
	13					LOSS 1.5
						UNACC 1.5
	14					
482.3						T/DEP 14.5
	15		SLS	15.7		
			sh w/SLS/CLS, ZONE			
	16		M.H. gr, , MASS			DEP 16.2
			GRADES MORE C L/w		Box 5	Pull #4
	17		DEPTH S. bkn zo			START 14:06
			0.2 @ 21.6 GRAD			END 14:25
	18		CONTACT			TIME 19 min
						DRL 19 min
	19					RAN —
						REC 4.9
				19.4		LOSS Ø
	20		(cont)		Box 6 (cont)	UNACC Ø DEP + T/DEP 19.4

ENG FORM 1836 MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.

PROJECT GALLIPOLIS Lock & Dam

HOLE NO. DLBS/2

DRILLING LOG (Cont Sheet) — ELEVATION TOP OF HOLE: 497.0 — Hole No. DLBS/2

PROJECT: Gallipolis Lock + Dam
INSTALLATION: ORH-CD
SHEET 2 OF 2 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20		SLS (CONT)		Box 6	Pull #5
	21					START 14:35
	22					END 15:10
						TIME 35 min
	23				23.1	DRL 35 min
						RAN —
						REC 7.5
472.9	24				Box 7	LOSS 1.0
	25		ICL GR-RED-S-SLT			UNACC 1.0
	26		RED below 26.9		26.6	
	27		0.8 LOSS 26.5-32.5			T/DEP 27.6
	28				Box 8	DEP 27.9
						Pull #6
	29				29.7	START 3:30
						END 3:40
	30					TIME 10 min
	31				Box 9	DRL 10 min
						RAN —
						REC 4.6
	32					LOSS 0.8 DEP 31.7
464.5			Bottom Hole		32.5	UNACC 0.8
	33					T/DEP 33.0
	34					
	35					
	36					
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					

ENG FORM 1836-A (ER 1110-1-1801) GPO 1950 OF-628-603
PROJECT: Gallipolis Lock + Dam
HOLE NO. DLBS/2

DRILLING LOG	DIVISION ORD	INSTALLATION ORH-CD		SHEET 1 OF 2 SHEETS

1. PROJECT Gallipolis Lock & Dam

10. SIZE AND TYPE OF BIT 3" x 5½'

2. LOCATION (Coordinates or Station) 2+80.08 Aux Lock Floor Pavement

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) MSL

3. DRILLING AGENCY Hayward Baker

12. MANUFACTURER'S DESIGNATION OF DRILL Ackor

4. HOLE NO. (As shown on drawing title and file number) EXP I

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED N/A — UNDISTURBED N/A

5. NAME OF DRILLER Steve Frye

14. TOTAL NUMBER CORE BOXES 7

15. ELEVATION GROUND WATER N/A

6. DIRECTION OF HOLE ☑ VERTICAL ☐ INCLINED ____ Ø DEG. FROM VERT.

16. DATE HOLE STARTED 10/8/91 COMPLETED 10/8/91

7. THICKNESS OF OVERBURDEN Ø

17. ELEVATION TOP OF HOLE 486.00

8. DEPTH DRILLED INTO ROCK 19.94'

18. TOTAL CORE RECOVERY FOR BORING 99.95 %

9. TOTAL DEPTH OF HOLE 24.5'

19. SIGNATURE OF INSPECTOR Larry M Drown

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
486.00	1		CONCRETE 486.00 To 481.44	100% 1.15'	Box 1	PULL #1 START 0712 RAN 16" TL 16" END 0731 REC 16" TP 16" TIME 19min LOSS Ø DWR good DRL 17min UACC Ø COLOR GR
	2			100% 3.0'	3.56	PULL #2 START 0740 REC 16" END 0756 LOSS Ø DWR good TIME 16min UNACC Ø COLOR GR DRL 15min TL 32" RAN 16" TP 32"
	3					
	4			94% 4.0'	482.44	PULL #3 START 0802 END 0833 REC 15" TL 48" TIME 31min LOSS 1" TP 48" DRL 19min UNACC Ø DWR good RAN 16" COLOR Rbr
481.44	5		CLAYSTONE 481.44 To 478.89 gr/gn, Fg., S.	100% 6.0'	Box 2 3.45	PULL #4 START 0834 LOSS Ø END 0858 UNACC Ø TIME 24min TL 6' DRL 24min TP 6' RAN 29" DWR good REC 29" COLOR GR
	6					
478.89	7		SHALE 478.89 To 468.23 GR/GN, Fg. HARDNESS INCREASING FROM SOFT To medium w/DEPTH CL DECREASING w/DEPTH ∴ R/BR ZONE 473.74- 474.00	93% 10.8'	478.99 Box 3 3.6	PULL #5 START 0927 END 1005 TIME 38min DRL 30min RAN 4'0" REC 4'6" LOSS Ø UNACC 4" TL 10'10" TP 10'6" DWR good COLOR GR
	8					
	9					
	10				475.39	
	11					
	12			107% 14.9'	Box 4 3.5	PULL #6 START 1019 END 1102 TIME 42min DRL 35min RAN 4'0" REC 4'4" LOSS Ø UNACC Ø TL 14'6" TP 14'10" DWR good COLOR GR
	13					
	14				471.89	
	15					
	16			99.83 19.7'	Box 5 4.16	PULL #7 START 1126 END 1250 TIME 84min DRL 40min RAN 4'10" REC 4' LOSS 10" UNACC Ø TL 19.67' TP 19.67' DWR good COLOR R/BR
	17					
468.23	18		CLAYSTONE 468.23 To 466.45 gr/gn, w/Rbr ZONE .5" or LESS IN THICKNESS Fg., VE.S., core loss .17% SLK .5" To 1" IN SIZE Throughout		467.73 Box 6	
466.45	19					
	20		CONT		CONT	CONT

ENG FORM 1836 MAR 71 — PREVIOUS EDITIONS ARE OBSOLETE. (TRANSLUCENT)

PROJECT Gallipolis Lock & Dam

HOLE NO. EXP I

		INSTALLATION			

Gallis Lock & Dam | ORH-CD | SHEET 2 OF 2 SHEETS

	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	20'		ICL		Box 4	Pull # B
					4'	START 1300
	21'		461.95 To 461.50			END 1905
						TIME 65 min
			R/CL w/ white/gray			DRL 50 min
	22'		VEIN OF CLAY Throughout			RAN 4'10"
			Fg. S To M.H.		463.73	REC 4'6"
				99.93	Box 5	Loss 4'
	23'					UNACC 6
					2.23'	TL 24.50'
						TP 24.50'
	24'					DWR Good
			Bottom Hole		461.50	COLOR R/BR
	25'					
	26'					
	27'					
	28'					
	29'					
	30'					

1836-A (ER 1110-1-1801) GPO 1990 OF - 628 - 803

PROJECT: Gallipolis Lock & Dam | HOLE NO. EXP I

DRILLING LOG	DIVISION ORD	INSTALLATION ORH·CD	SHEET 1 OF 2 SHEETS

1. PROJECT
Gallipolis Lock + Dam

2. LOCATION (Coordinates or Station)
6+32.5B Lock Lateral N 5'OC.

3. DRILLING AGENCY
HAYWARD BAKER

4. HOLE NO. (As shown on drawing title and file number) EXP II

5. NAME OF DRILLER
STEVE FAYE

6. DIRECTION OF HOLE
☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.

7. THICKNESS OF OVERBURDEN Ø

8. DEPTH DRILLED INTO ROCK 21.17

9. TOTAL DEPTH OF HOLE 24.25

10. SIZE AND TYPE OF BIT 2"x5½'

11. DATUM FOR ELEVATION SHOWN (TBM or MSL) M.S.L.

12. MANUFACTURER'S DESIGNATION OF DRILL ACKER

13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN DISTURBED N/A UNDISTURBED N/A

14. TOTAL NUMBER CORE BOXES 6

15. ELEVATION GROUND WATER N/A

16. DATE HOLE STARTED 10/9/91 COMPLETED 10/10/91

17. ELEVATION TOP OF HOLE 488.00

18. TOTAL CORE RECOVERY FOR BORING 99.79 %

19. SIGNATURE OF INSPECTOR Larry M Wiburn

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV- ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
488.00	1		CONCRETE 488.00 To 484.92	100%	Box 1 3.42	START 1028 PULL #1 END 1039 REC 153 DWR 9ml Time 11min LOSS Ø color ge DRL 11min UNACC .5 RAN 16" TL 15.5" TP 16.0"
	2			99.96%	486.7	START 1096 PULL #2 END 1103 LOSS 1' Time 18min UNACC Ø DRL 17min TL 38.5 RAN 23" TP 39.0 REC 22.5 DWR good color ge
484.92	3				489.8	
484.58			CLAYSTONE 484.92 To 484.58 Top .12 Badly weaThered And BKN gr/gn, Fg., S.	100%	489.56 Box 2 3.7	START 1110 PULL #3 END 1129 UNACC Ø Time 19min TL 5'4" DRL 14min TP 5'4" RAN 25" DWR good REC 25" color ge LOSS Ø
	4		SILTSTONE 484.58 To 476.14 gr/gn, Fg., m.H., small ⅛ To 1/16 FRACTURES Top 2" 482.09 GrouT Filled Fracture ¼" wide 45° Angle		482.95	
	5					START 1210 PULL #4 END 1245 Time 65min DRL 35min RAN 4'10" REC a'4½
	6				480.85 Box 3 3.27	
	7			100%		LOSS 6 UNACC .59' TL 9.46 TP 10.0 DWR good color ge
479.40	8					
	9		SANDSTONE 479.40 To 469.75 gr/white , mTo F.g., m.H, Clay seams 479.40, 479.12, 478.53		476.59	
	10				477.61	START 1305 PULL #5 END 1329 Time 24min DRL 20min RAN 4.92 REC 4.56 LOSS .36 UNACC Ø TL 14.25 TP 14.58 DWR good color ge
	11				Box 4 3.86	
	12			100%		
	13					
	14				473.75 473.75	
	15				Box 5 4.36	START 1345 PULL #6 END 1416 Time 31min DRL 25min RAN 4'10" REC 3'9½" LOSS .59
	16			99.97%		UNACC .99 TL 18.63 TP 19.41 DWR good color ge
	17					
	18					
469.75				469.37 469.39		
469.15	19		Interbed clr/ss. S.S. white/gr mF, m.H Cl gr/gn Fg., VF.g., Lost 1.97'Core 469.39 To 467.65	99.51%	Box 6 (cont)	START 1936 PULL #7 END 1951 RAN 3' Time 24min REC 1.72 DRL 20min LOSS 1.97 (cont)
	20		(cont) ICL			

ENG FORM 1836
MAR 71 PREVIOUS EDITIONS ARE OBSOLETE.
(TRANSLUCENT)

PROJECT Gallipolis Lock+Dam

HOLE NO. EXP II

ipolis Lock & Dam | INSTALLATION ORH-CD | SHEET 2 OF 2 SHEETS

DEPTH	LEGEND	CLASSIFICATION OF MATERIALS (Description)	% CORE RECOV. ERY	BOX OR SAMPLE NO.	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant)
b	c	d	e	f	g
20		ICL		BOX 6	
21		R/BR, UE.S, LASTRUN		4.4	PULL #8
		TOTAL LOSS			START 0715
			Φ		END 0802
22					TIME 47MIN
					DRL 40min
23					RAN 4'0"
					REC 5
					LOSS 3'10'
24					UNREC 1'
					TL 24.75
					TP 25.76
		BOTTOM HOLE	96325	413.25	DWR GOOD
25					COLOR R./BR
26					
27					
28					
29					
50					

336-A (ER 1110-1-1801)   GPO 1980 OF - 620 - 603 | PROJECT Gallipolis Lock / Dam | HOLE NO. EYP II